sapa:
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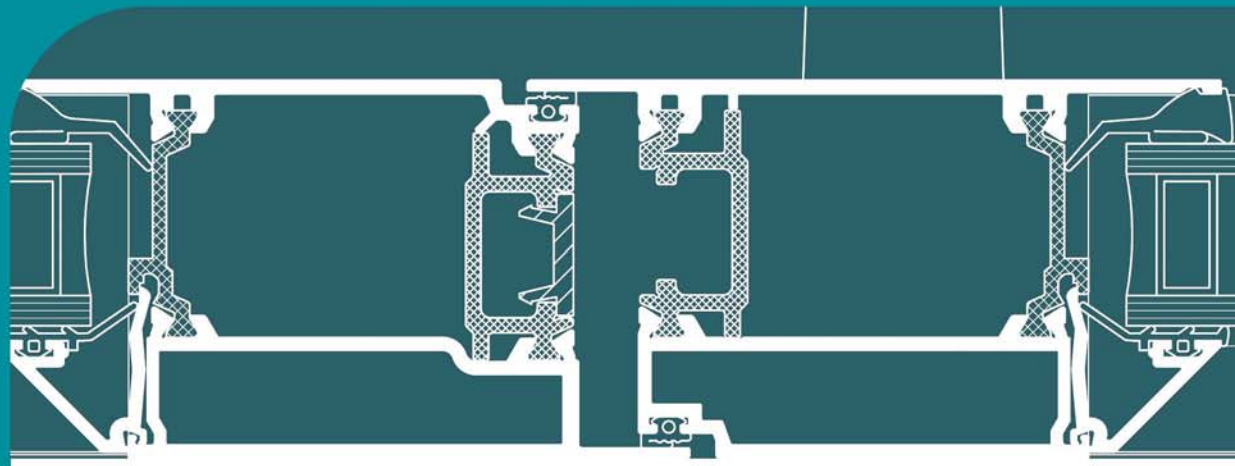
ARCHITECTURAL ALUMINIUM SOLUTIONS



Crown Residential Door

CROWN

INDEX

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Specification

Scope

This specification details materials, construction, finish and size limitations for the Crown Entrance Door system. This range is designed to meet high performance requirements in a variety of applications. The suite of profiles can be constructed to form single or double, open in or open out doors.

Materials

Aluminium profiles are extruded from aluminium alloy 6060 T6 complying with the recommendations of BS EN 755-9:2001. Polyester powder coat finishes are available to BS EN 12206-1:2004 in a wide range of colours. Anodised finishes are to BS 3987 Grade AA25 etch silver as standard - other anodised finishes may be available on application.

Weatherstripping is a combination of TPE seal and polypropylene backed woven pile set in undercut grooves in the sash and frame.

The thermal barrier is achieved using two polyamide extrusions separating the internal and external faces.

Construction

Outerframe members are mitre cut at 45° with stile and rails square cut. Corners are reinforced with aluminium corner cleats.

All joints shall be sealed during fabrication against water entry.

Assembly and Installation

Detailed instructions are provided in this publication, which must be strictly conformed to. Only parts supplied by Sapa should be used in the manufacture of Crown Entrance Doors.

Thermal Performance

Crown Entrance Doors can meet and surpass the area weighted average U values stipulated in Part L of the Building Regulations. Lower U-values can be achieved using double glazed units with enhanced thermal insulation, such as ‘soft coat’ low emissivity glass, argon gas filling and thermally enhanced spacer bar.

Hardware

Doors are hung on bespoke aluminium hinges with stainless steel pins and nylon bushes, and incorporate an integral high security feature. Locks are of eurogroove construction with 3 hooks, central latch, and full length stainless steel faceplate. An optional integrated 5 lever auxiliary lock is also available. On double doors the slave leaf is secured by means of a finger operated bolt at head and cill or central gearbox operated shootbolt.

Die cast handles are available in a variety of finishes. Cylinders supplied in kits are Kitemarked to BS EN 1303. All keeps are adjustable and are manufactured from zinc plated pressed steel.

Glazing

Glass must conform to BS6262 for thickness and type. Insulating glass units of 24mm, 28mm can be accommodated.

Glass is set against extruded synthetic rubber gaskets retained in undercut grooves within the aluminium profile, or with a self-adhesive backing. Final retention of the glass is achieved by the application of a wedge gasket between the inner face of the glass and bead or frame.

Performance (Thermal)

When calculated in accordance with BS EN 10077-2, the Crown entrance door will achieve 1.8 W/m²K thermal transmittance, using standard door sizes and glazing configurations shown in the table below.

		Glass Centre Pane & Edge Spacer Spec					
		1.0		1.1		1.2	
		Warm Edge	Super Spacer	Warm Edge	Super Spacer	Warm Edge	Super Spacer
Crown Single Door Standard Threshold - Open In	75mm Frame	✓	✓	✓	✓	✓	✓
Crown Double Door Standard Threshold - Open In		✓	✓	✓	✓	✓	✓
Crown Single Door Low Threshold - Open In		✓	✓	✓	✓	✓	✓
Crown Double Door Low Threshold - Open In		✓	✓	✓	✓	✓	✓
Crown Single Door Standard Threshold - Open Out		✓	✓	✓	✓	✓	✓
Crown Double Door Standard Threshold - Open Out		✓	✓	✓	✓	✓	✓
Crown Single Door Low Threshold - Open Out		✓	✓	✓	✓	✓	✓
Crown Double Door Low Threshold - Open Out		✓	✓	✓	✓	×	✓
Crown Single Door Standard Threshold - Open In	52mm Frame	✓	✓	✓	✓	✓	✓
Crown Double Door Standard Threshold - Open In		✓	✓	✓	✓	✓	✓
Crown Single Door Standard Threshold - Open Out		✓	✓	✓	✓	✓	✓
Crown Double Door Standard Threshold - Open Out		✓	✓	✓	✓	✓	✓

Table calculated using standard door size configurations to BR443/EN14351

Single Door :- 1230 wide x 2180 high
Double Door :- 2000 wide x 2000 high

Performance (Air & Water)

When tested in accordance with BS6375:Part 1:2009, the products listed in this manual, when manufactured, installed and glazed strictly to the enclosed details, will meet the following UK exposure categories:-

Single Doors		Std. Threshold	Low Threshold
Open In	Water	Class 5A (200 Pa)	Class 3A (100 Pa)
	Air	Class 2 (300 Pa)	Class 2 (300 Pa)
	Wind Res.**	Class 3 (1200 Pa)	Class 3 (1200 Pa)

Double Doors		Std. Threshold
Open Out	Water	Class 8A (450 Pa)
	Air	Class 2 (300 Pa)
	Wind Res.**	Class 3 (1200 Pa)

** Exposure category varies with Width/Height of door and mullion / transom used, as these are the only unsupported members. An accurate figure can be obtained using BS6399:Part 2 calculations.

Size Limitations

All sizes given are in millimetres, and relate to the overall size of the doorset.

75mm Outer Frame

Single Doors	Minimum Width Height	Maximum Width Height
Std. Threshold	600 x 1879	1074 x 2230
Low Threshold	600 x 1860	1074 x 2211
Double Doors		
Std. Threshold	1133 x 1879	2082 x 2230
Low Threshold	1133 x 1860	2082 x 2211

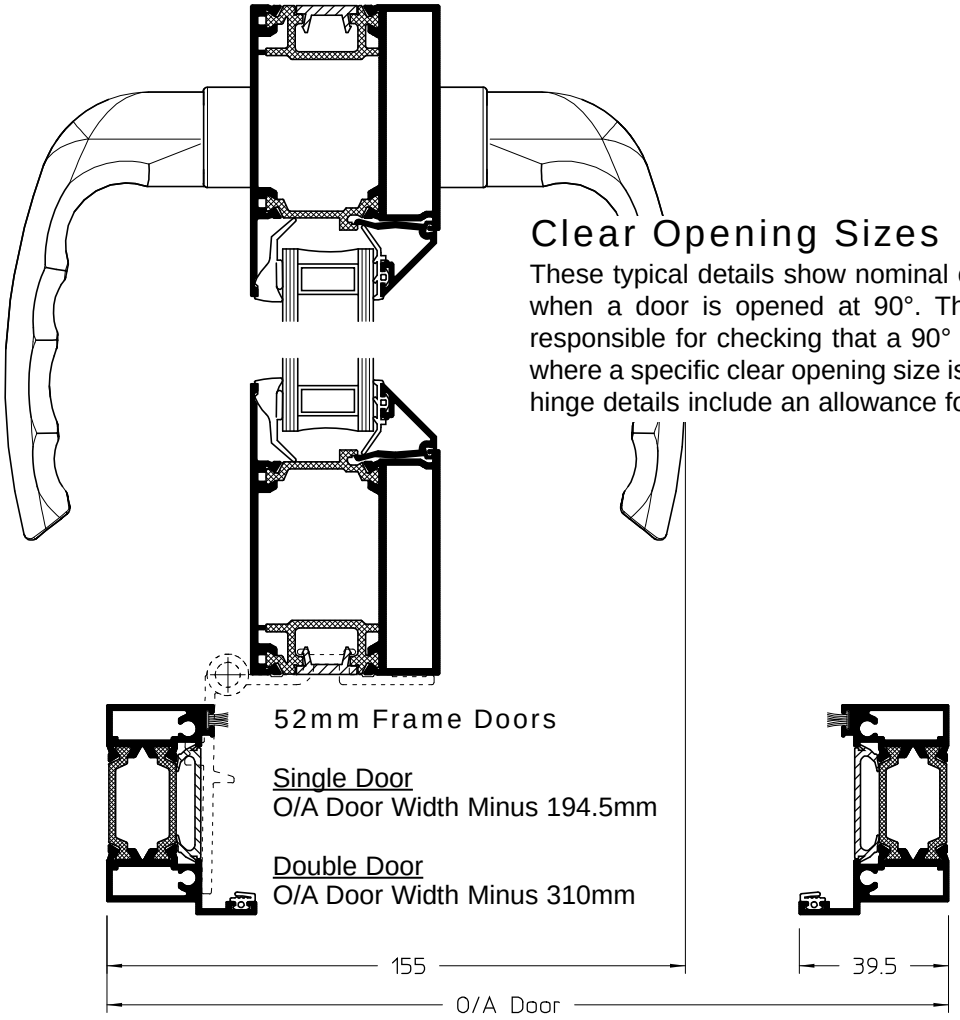
52mm Outer Frame

Single Doors	Minimum Width Height	Maximum Width Height
Std. Threshold	589 x 1868	1063 x 2219
Double Doors		
Std. Threshold	1122 x 1868	2070 x 2219

Maximum Leaf Weight	75kg

Clear Opening Sizes

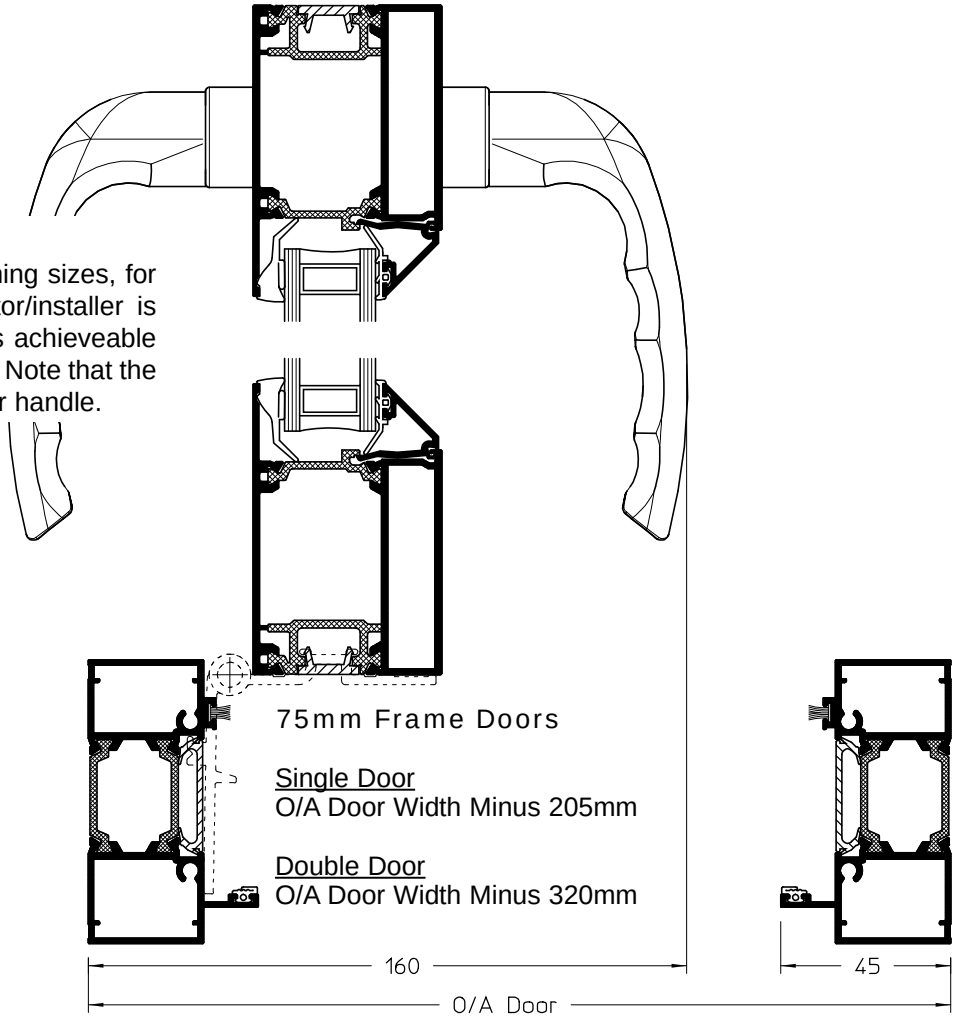
These typical details show nominal clear opening sizes, for when a door is opened at 90°. The fabricator/installer is responsible for checking that a 90° opening is achieveable where a specific clear opening size is required. Note that the hinge details include an allowance for the lever handle.



52mm Frame Doors

Single Door
O/A Door Width Minus 194.5mm

Double Door
O/A Door Width Minus 310mm



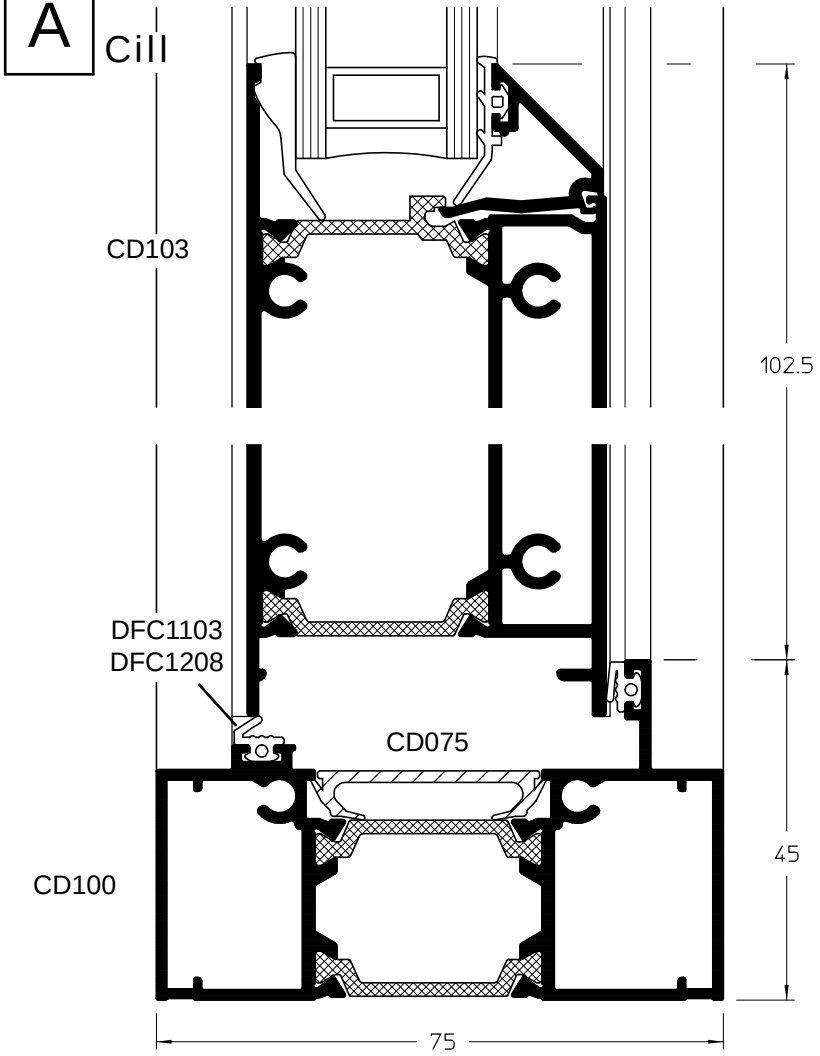
75mm Frame Doors

Single Door
O/A Door Width Minus 205mm

Double Door
O/A Door Width Minus 320mm

General Arrangements

A Cill

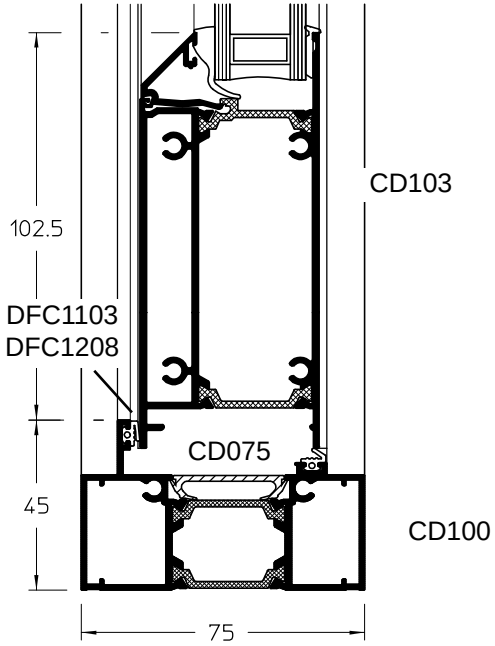


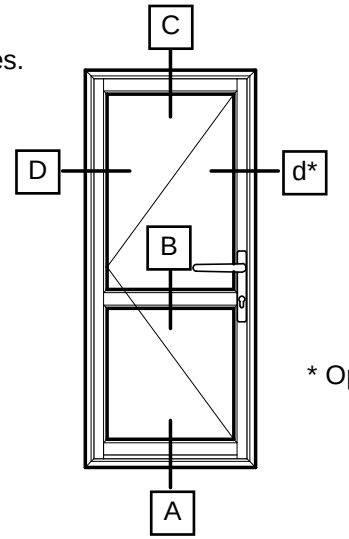
Typical entrance doors showing general arrangement reference codes.

General arrangements shown in this manual are for open in doors. Open out doors are a mirror image with different glazing arrangement.

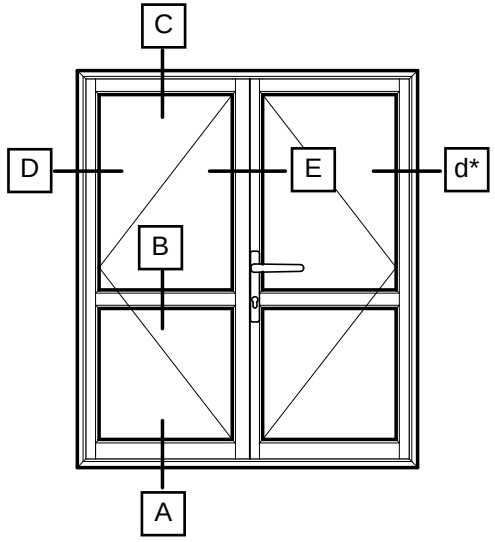
Open out doors are glazed in, and open in doors are glazed out.

See example half size detail below.





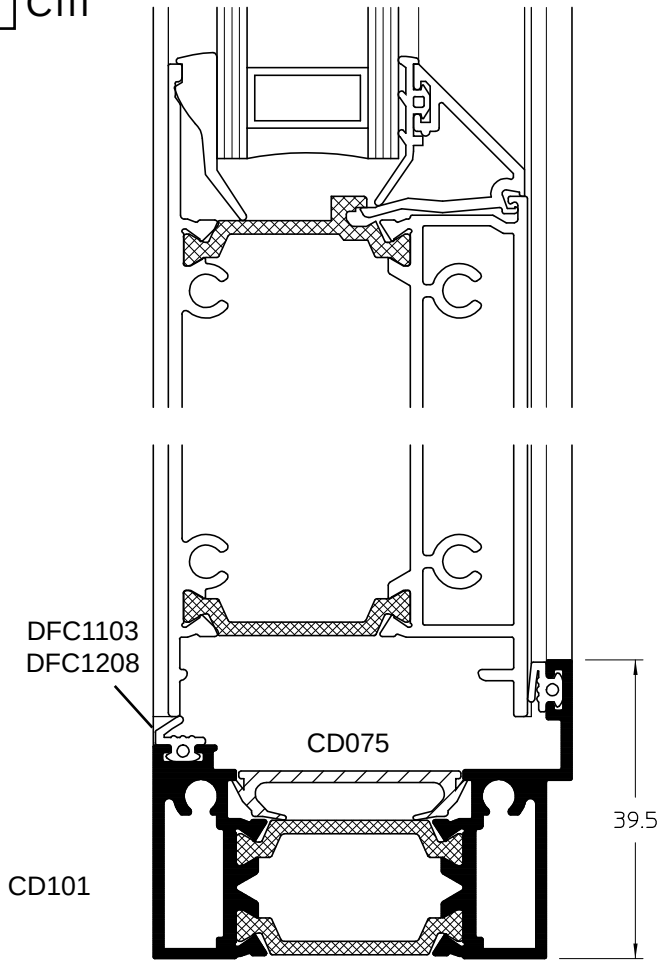
* Opposite Hand as shown



General Arrangements

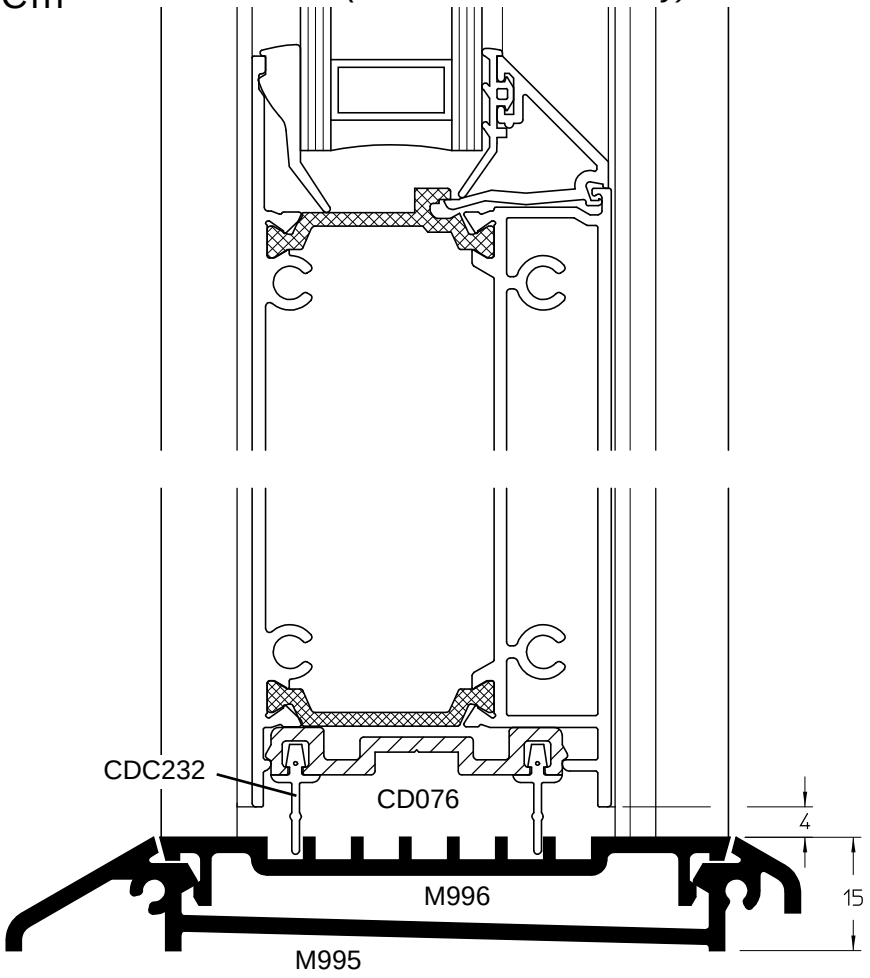
A Cill

Showing alternative 52mm outerframe.



A Cill

Showing alternative low threshold.
(75mm outerframe only)



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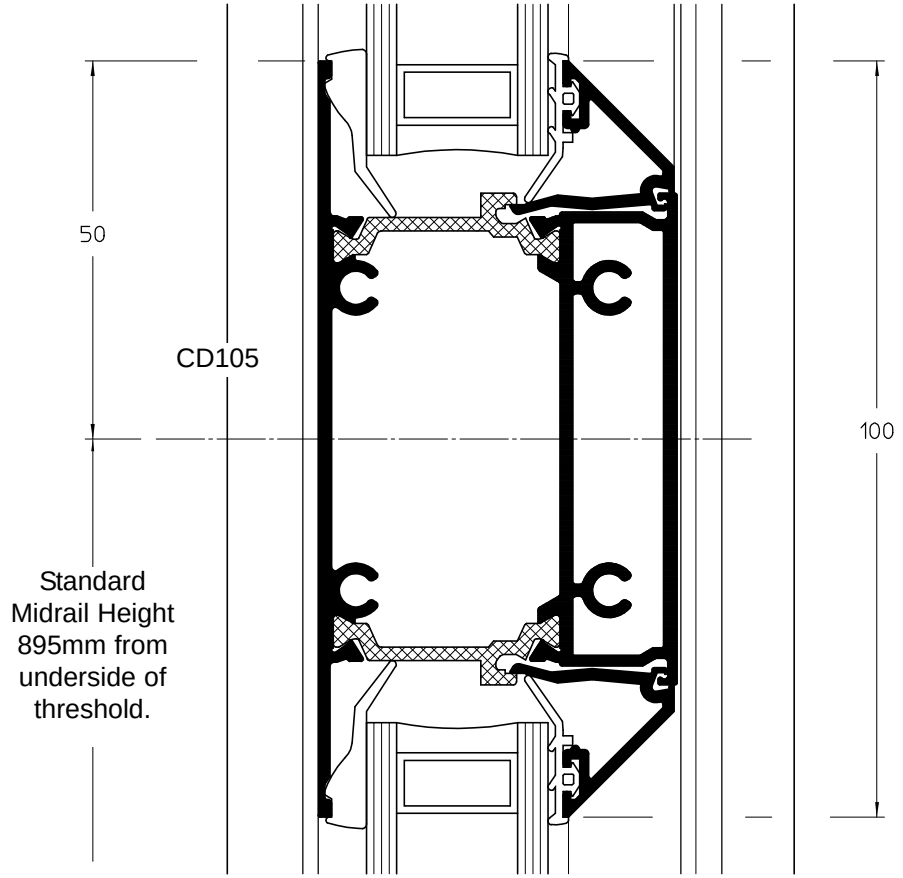
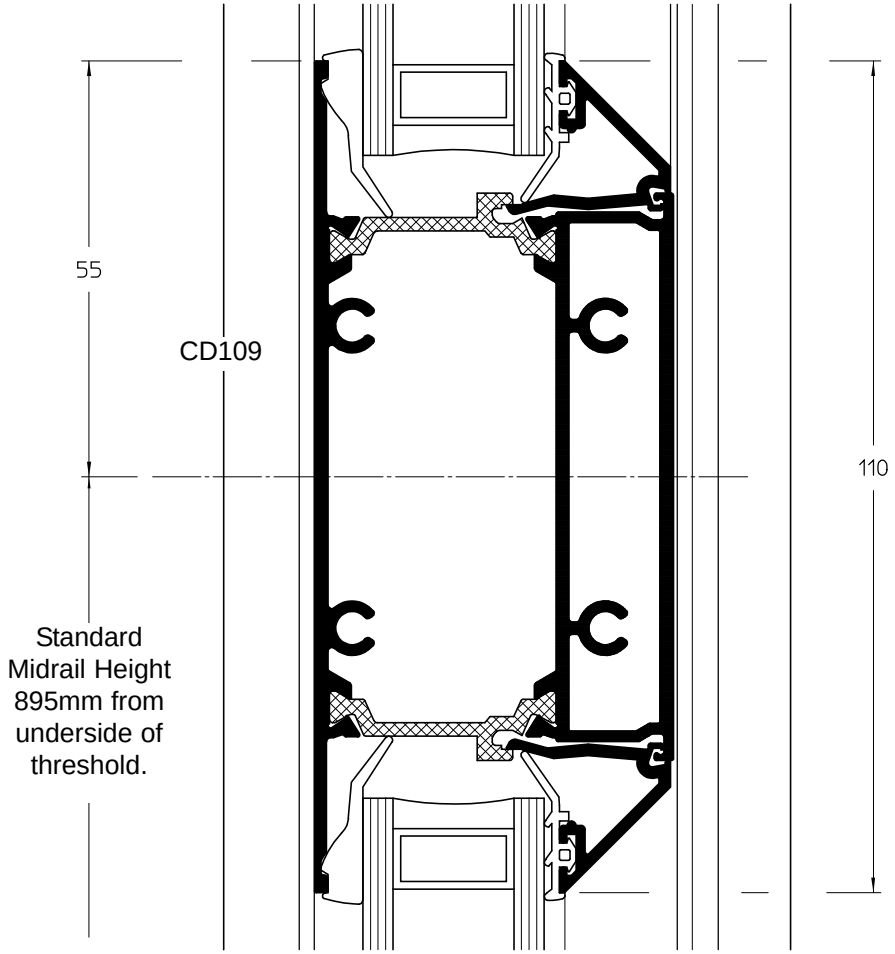
General Arrangements

B 100mm Midrail

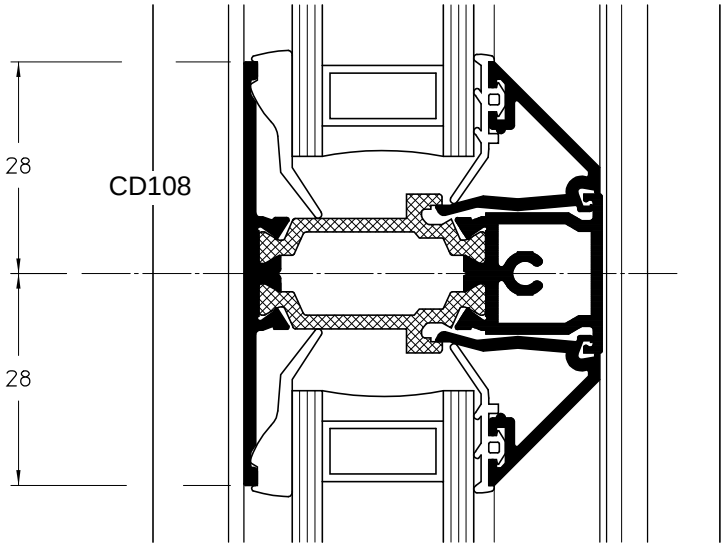


B 110mm Midrail



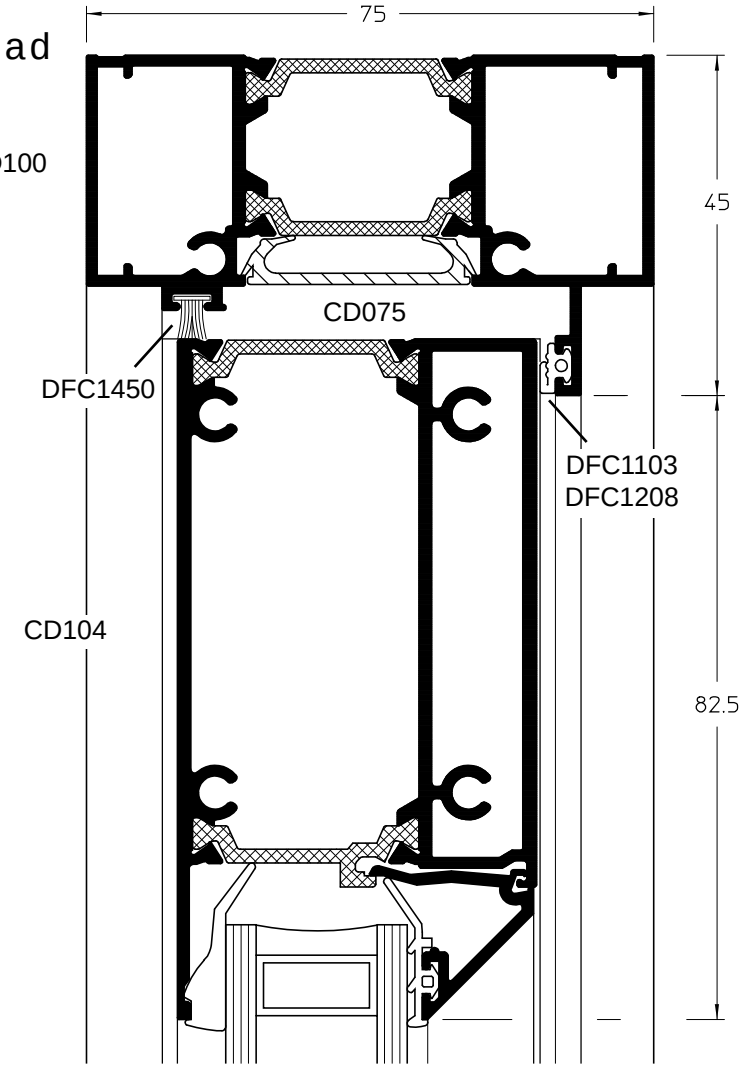
General Arrangements

B Laybar

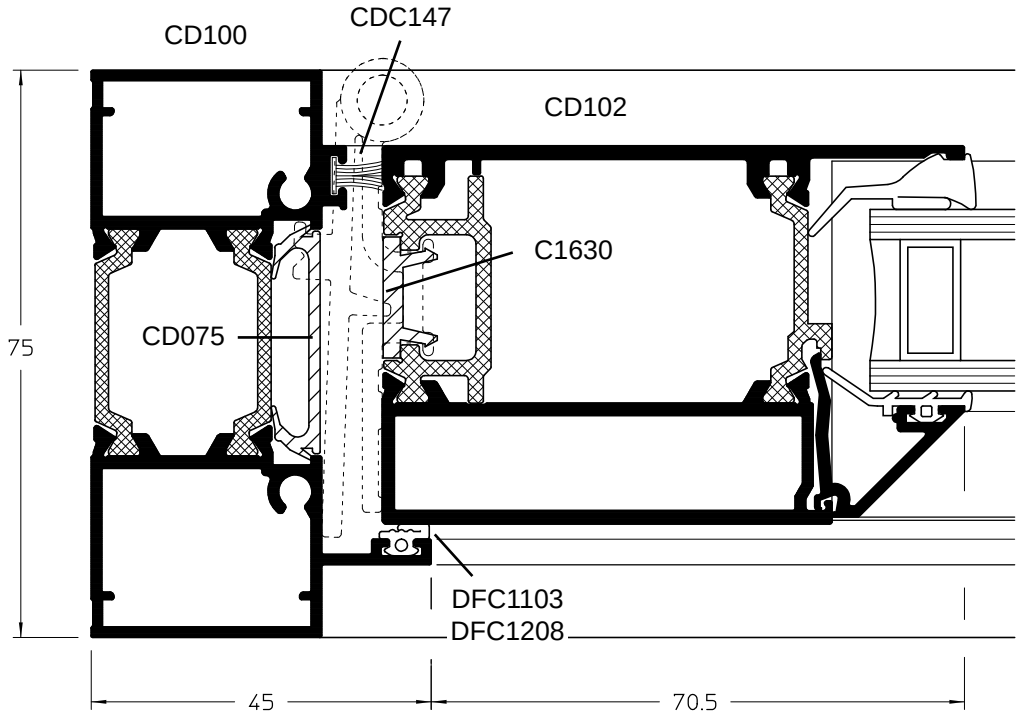


General Arrangements

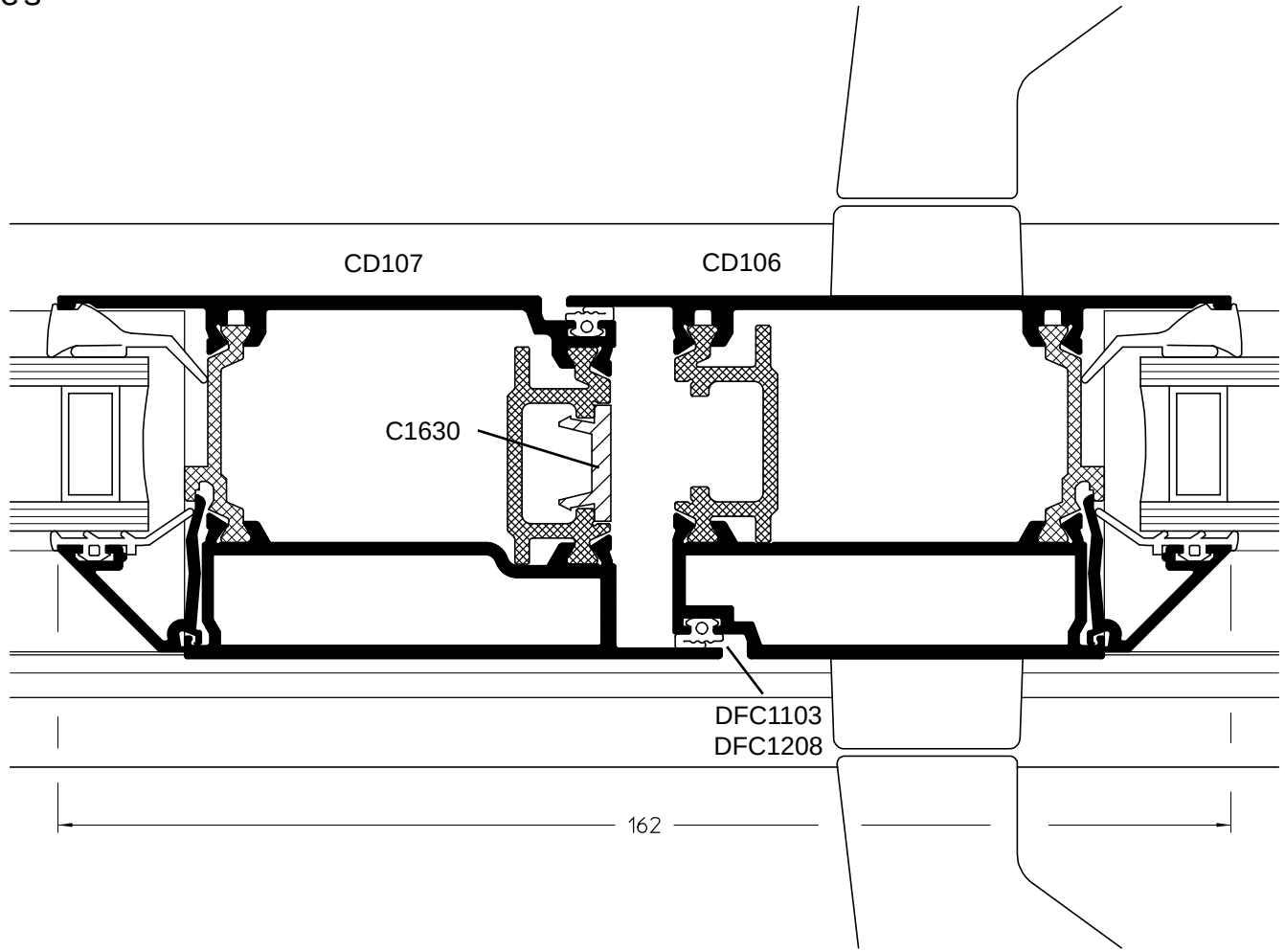
C Head



D Jamb

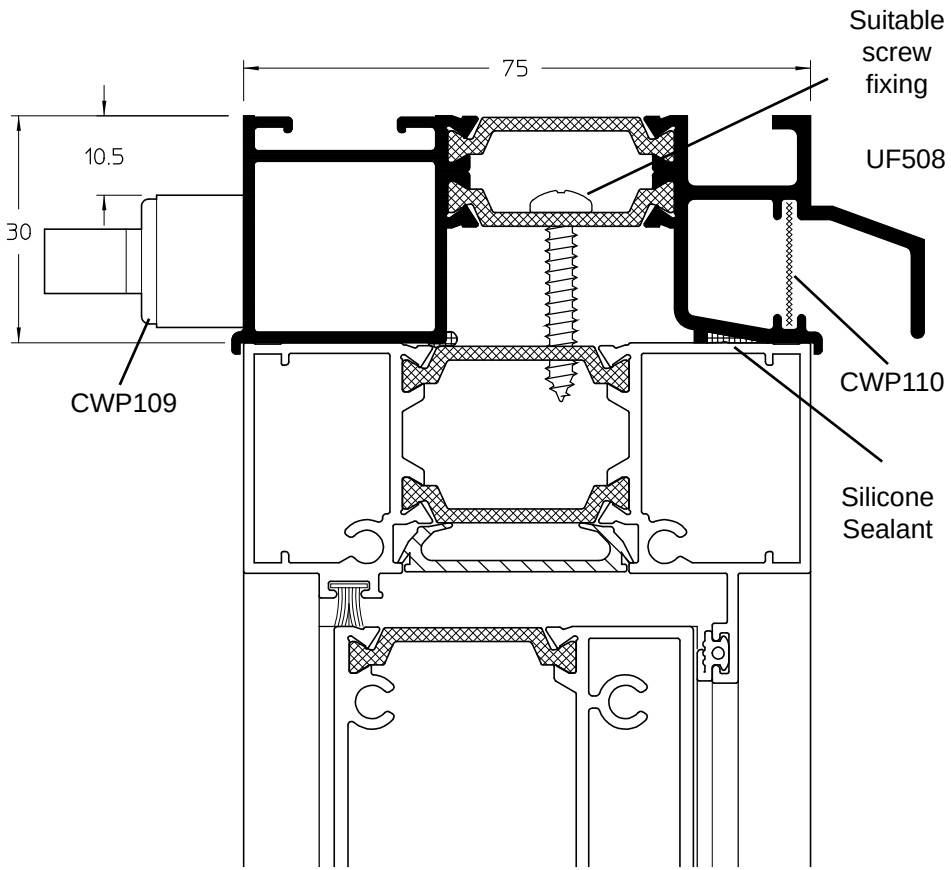


E Meeting Stiles

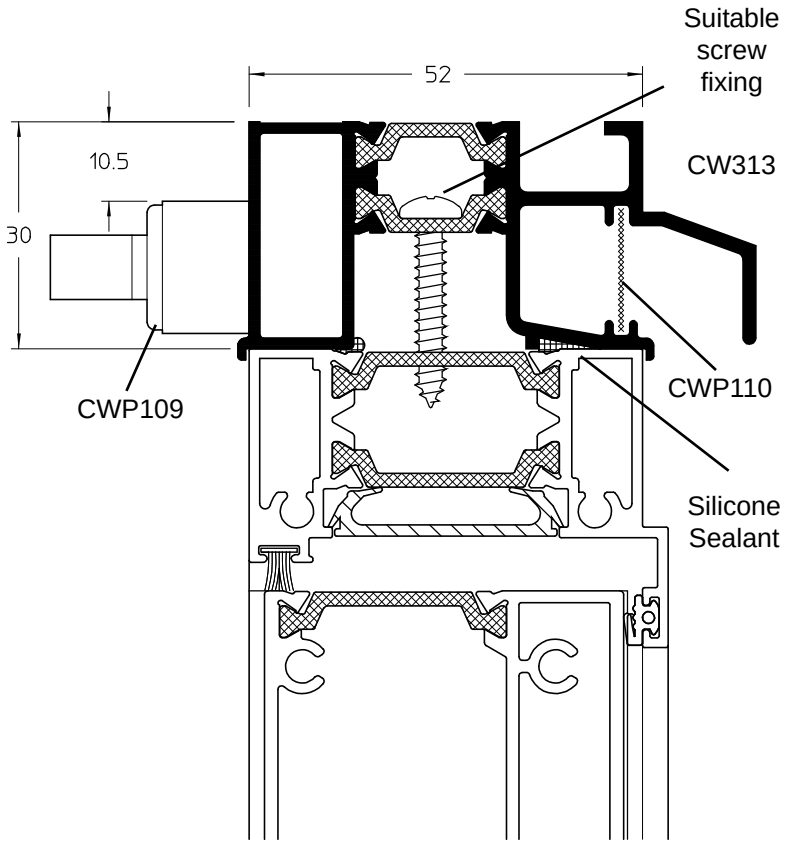


Head Vent Profile

Showing optional trickle vent profile in 75mm frame.

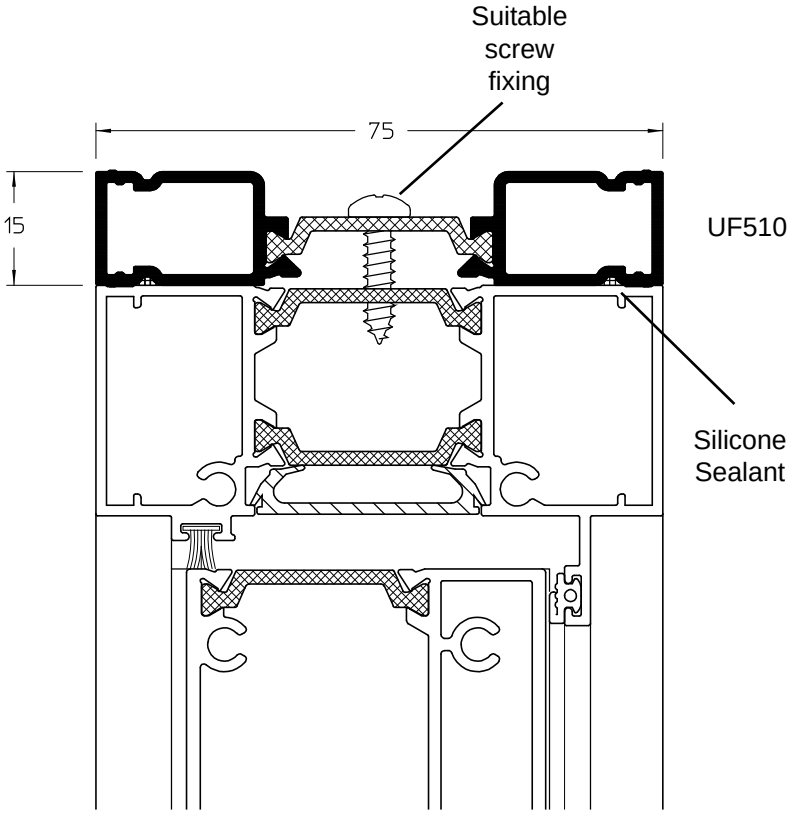


Showing optional trickle vent profile in 52mm frame.



15mm Frame Extender

Showing optional trickle vent profile in 75mm frame.

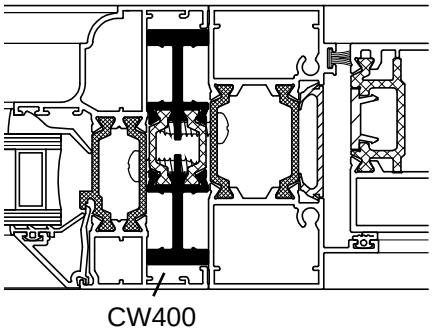


Concealed Coupler

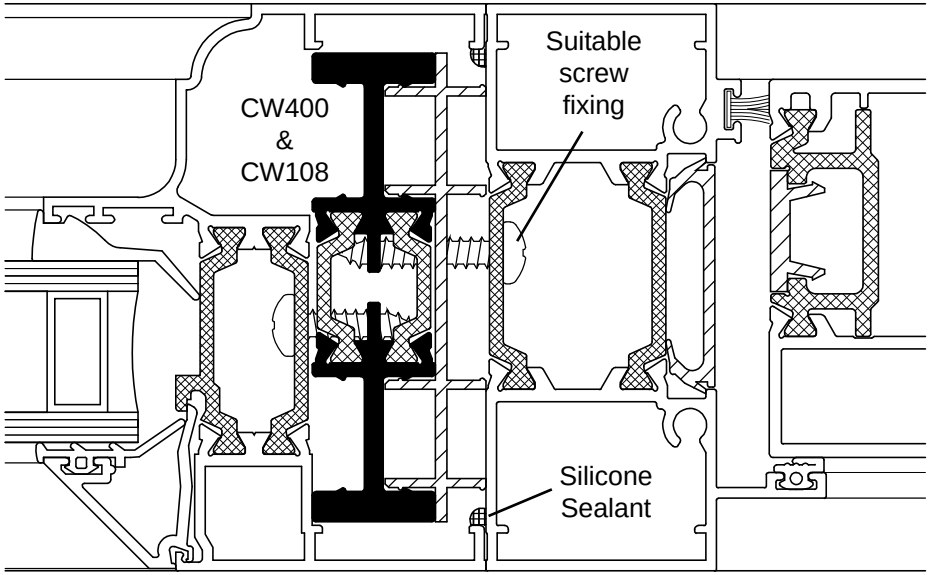
The concealed coupler is to be used with Crown Windows and Crown doors using 75mm outerframe.

Window outerframe/coupler options are:-

Frame profiles CW301, CW304, CW320, CW321 (Use CW400 coupler)

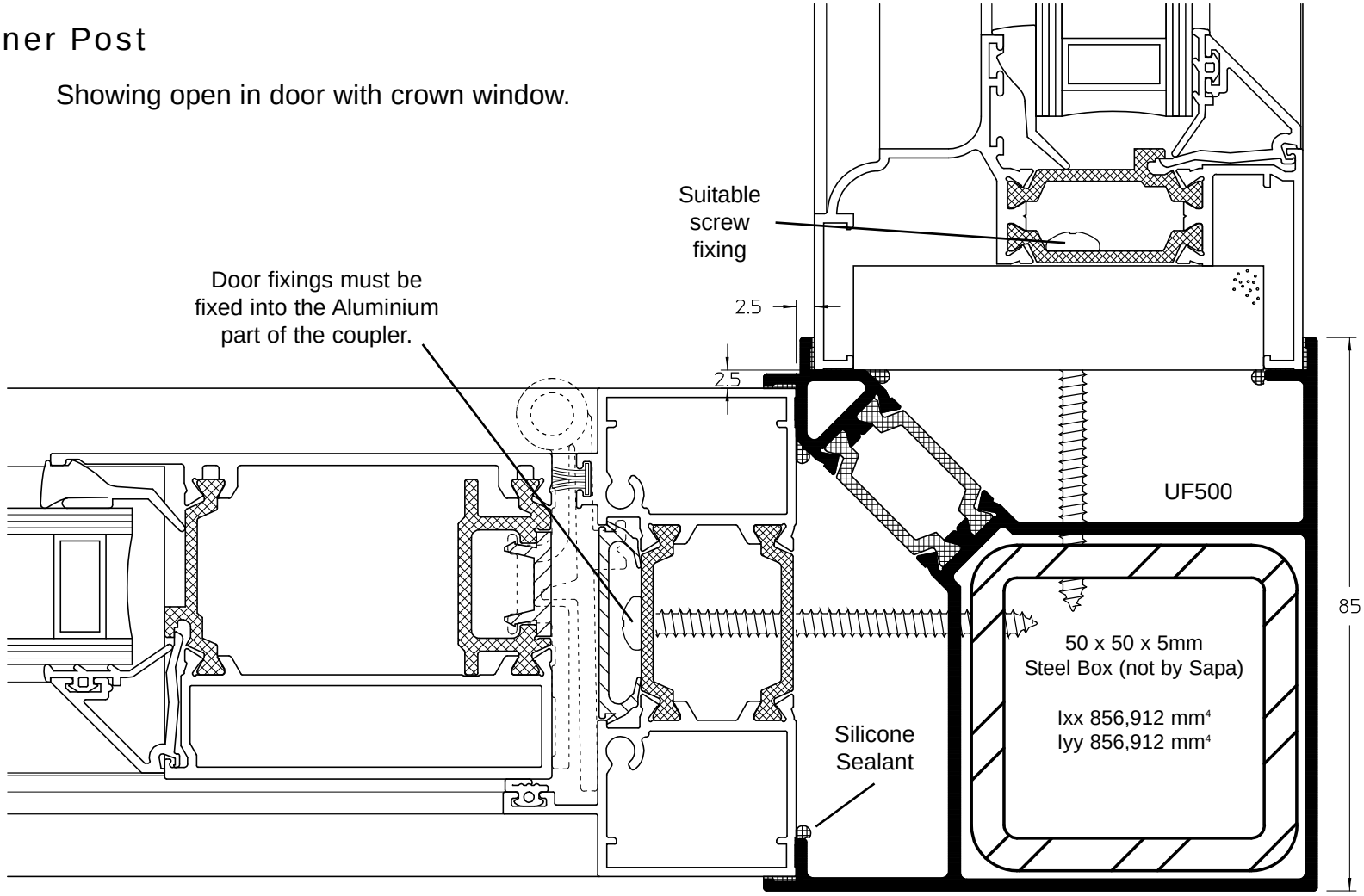


Frame profile CW302 (Use CW400 coupler & CW108 coupler packer)



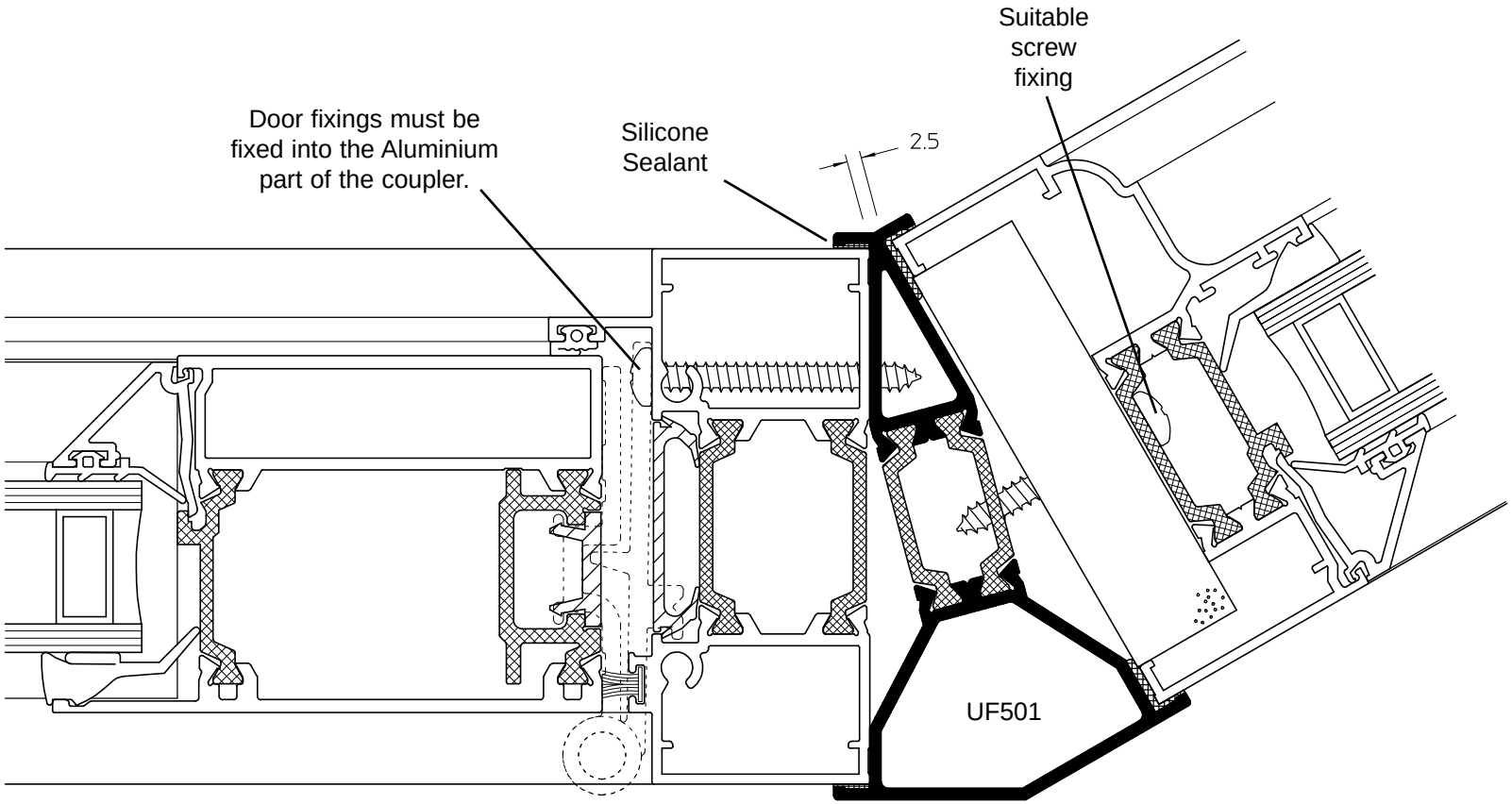
90° Corner Post

Showing open in door with crown window.



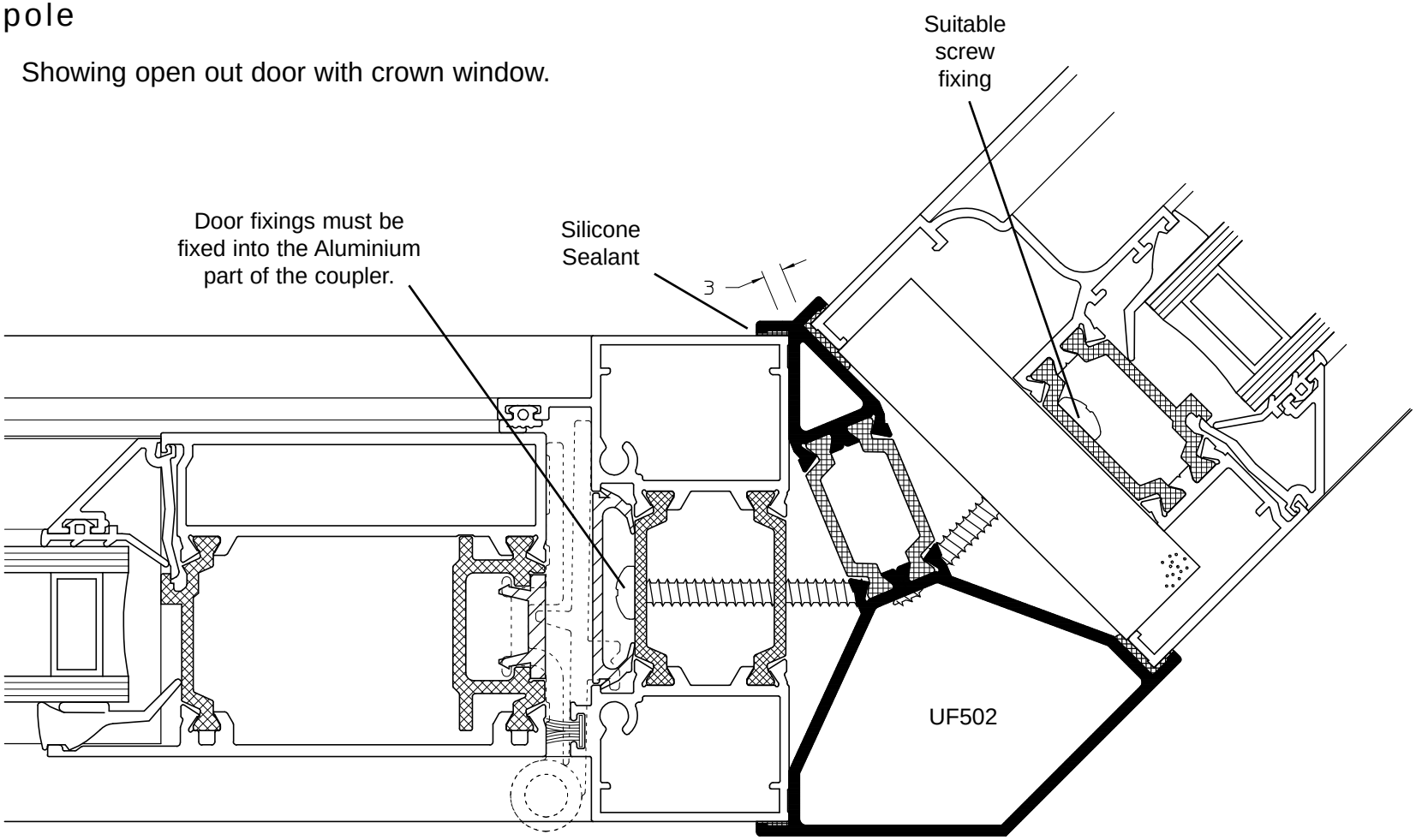
150° Baypole

Showing open out door with crown window.



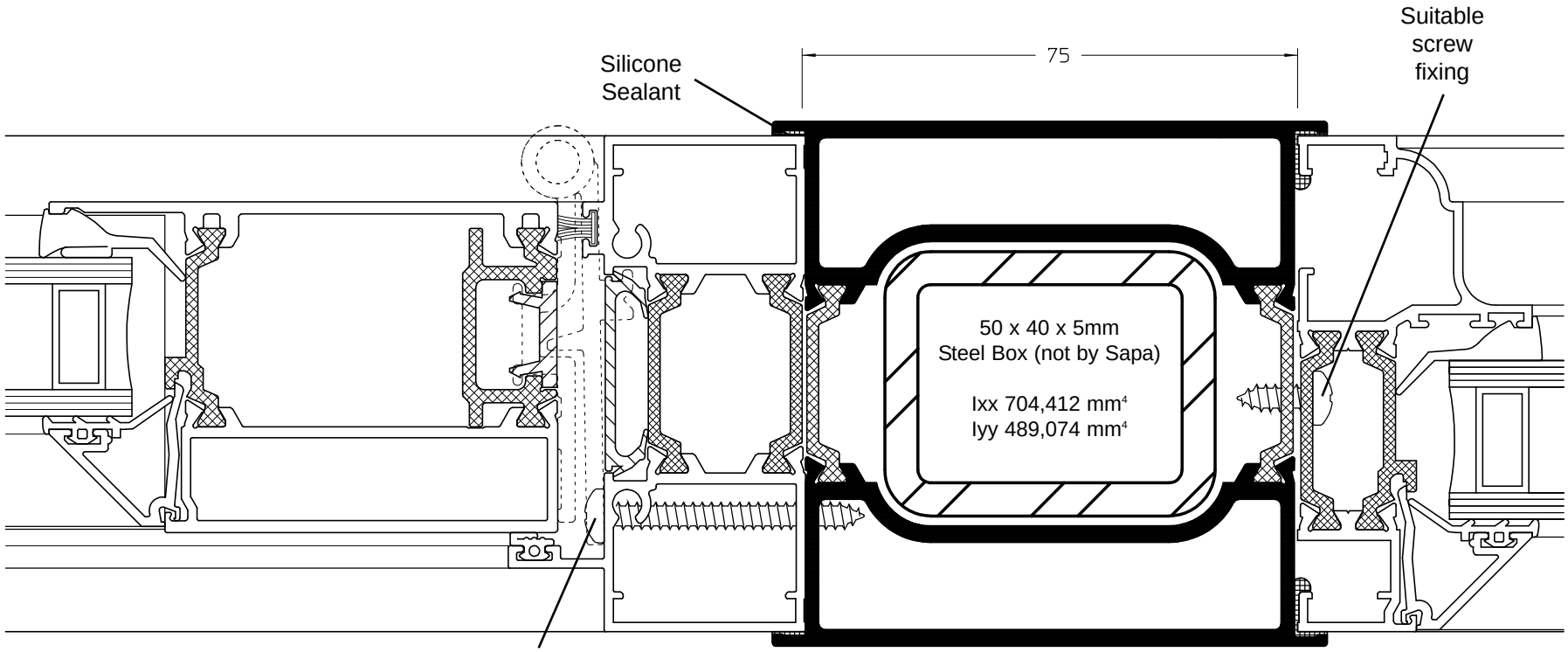
135° Baypole

Showing open out door with crown window.



75mm Heavy Duty Coupler

Showing open in door with crown window.

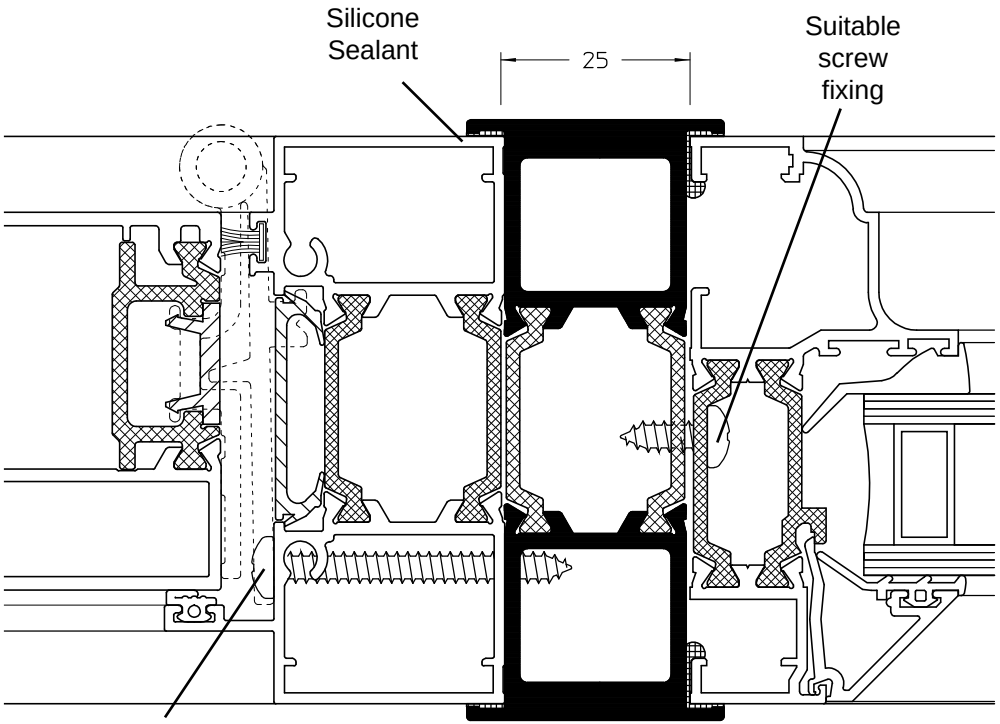


UF503

General Arrangements

25mm Heavy Duty Coupler (75mm)

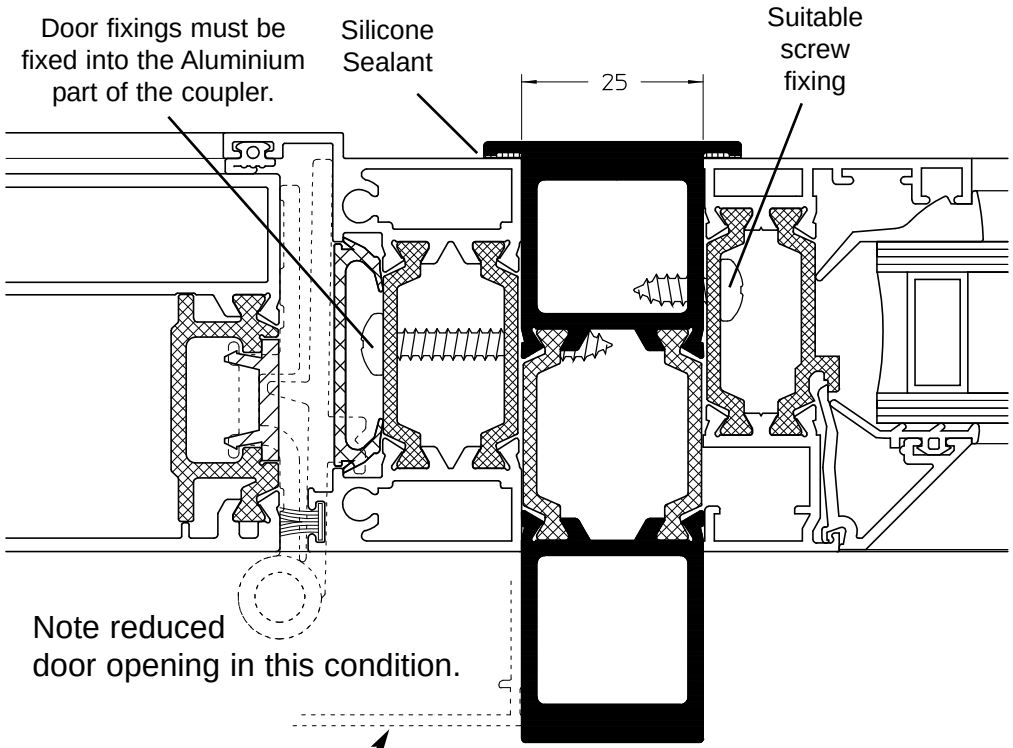
Showing open in door with crown window.



UF504

25mm Heavy Duty Coupler (52-75mm)

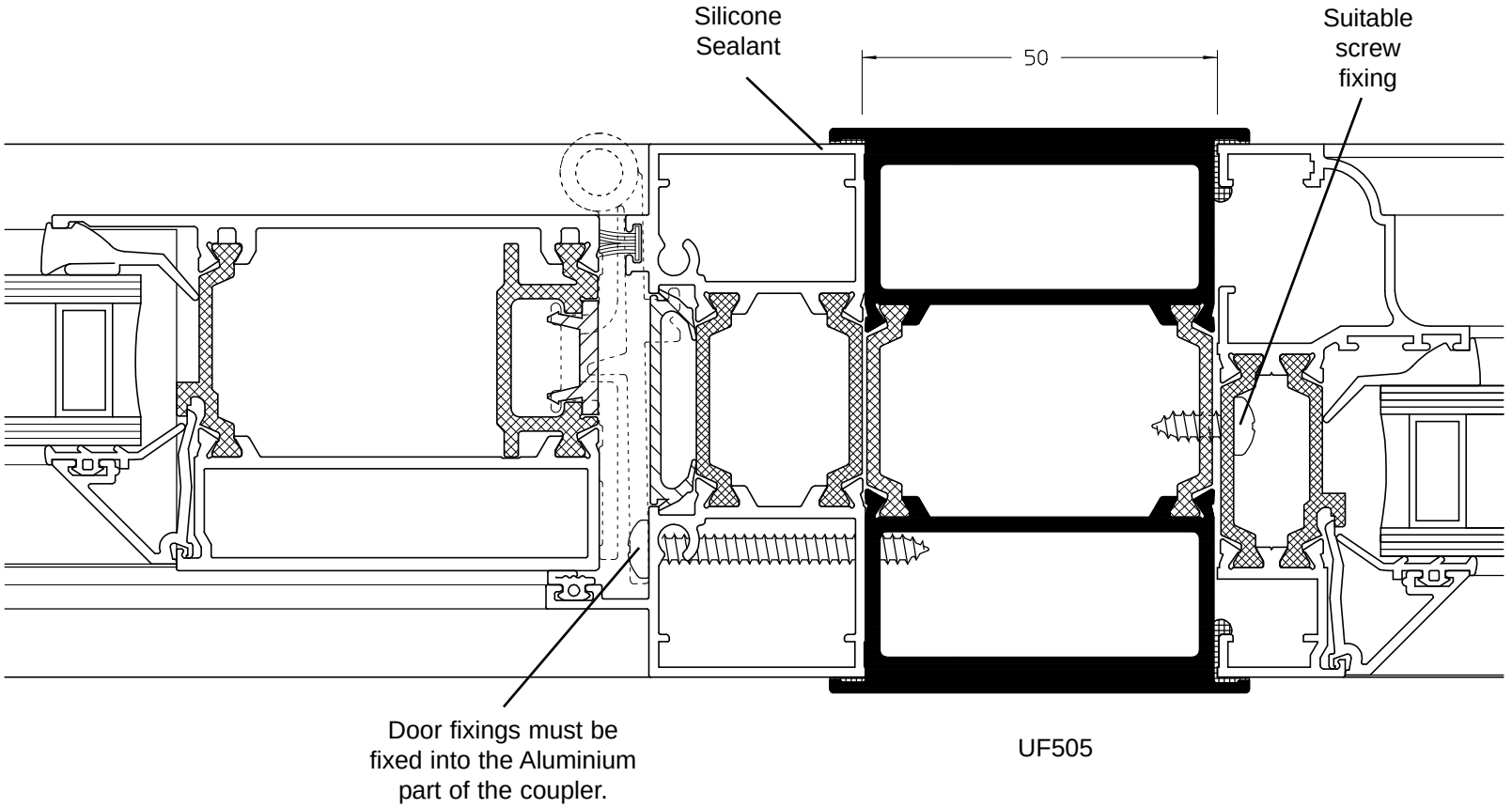
Showing open in door with crown window using 52mm outerframes.



UF509

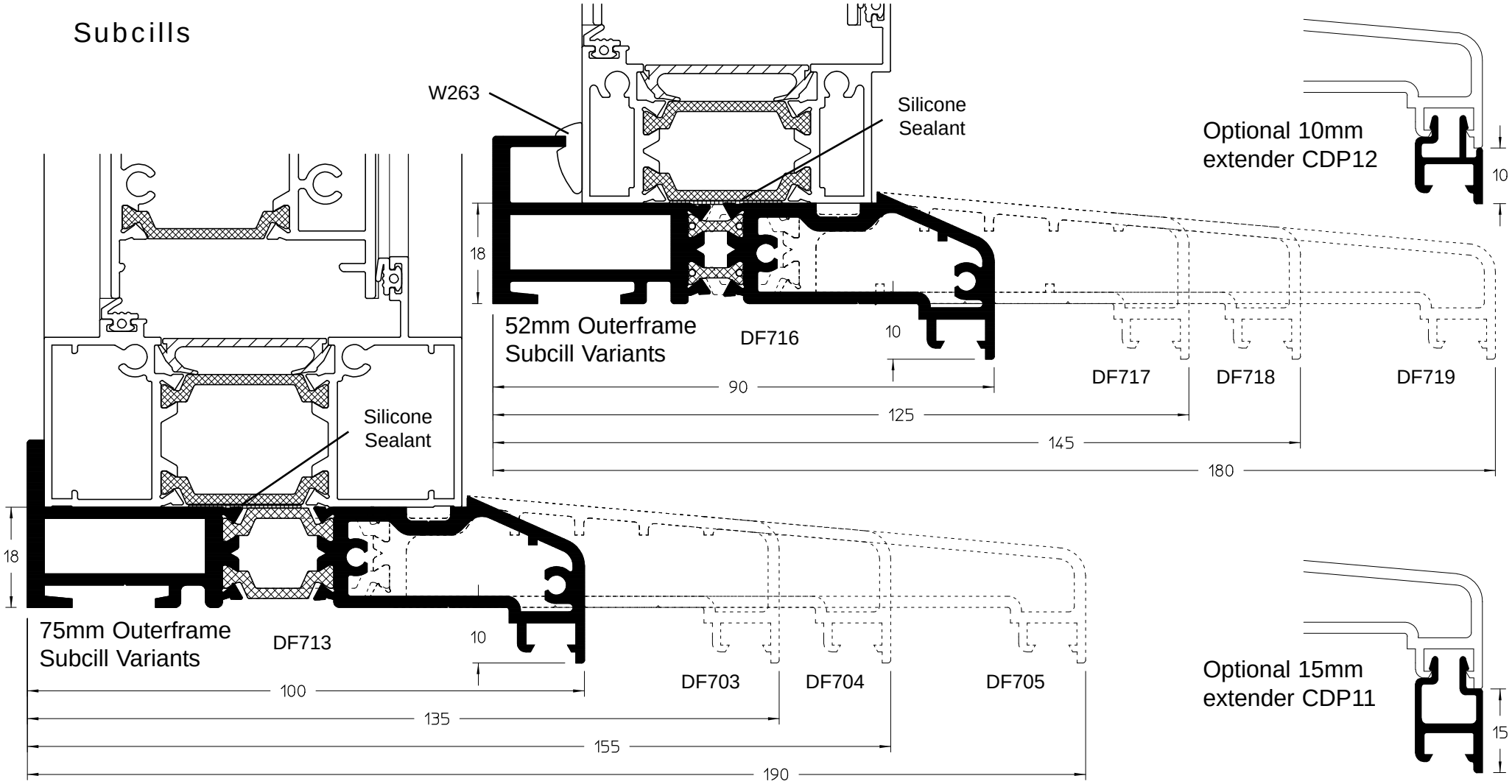
50mm Heavy Duty Coupler

Showing open in door with crown window.



General Arrangements

Subcills



Profile Inertia Values

TBA

Parts List

NOTE - 'A' and 'B' ref in brackets after some profiles relates to reference for SP/SP finish only

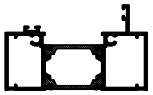
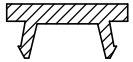
Illustration	Part No.	Description
Outerframe Profiles		
	CD100	75mm Outerframe
	CD100-A	75mm Outerframe (Open Out)
	CD100-B	75mm Outerframe (Open In)
	CD101	52mm Outerframe
	CD101-A	52mm Outerframe (Open Out)
	CD101-B	52mm Outerframe (Open In)
Couplers & Misc Profiles		
	C1630	Stile Pocket Trim

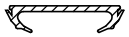
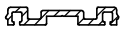
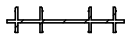
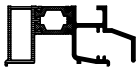
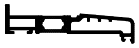
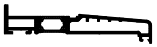
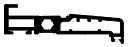
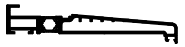
Illustration	Part No.	Description
	CD075	Pocket Infill Trim
	CD076	Low Threshold Seal Carrier
	CDP11	15mm Outerframe Extender
	CDP12	10mm Outerframe Extender
	CW108	Concealed Coupler Packer
	CW313	Trickle Vent Body (52mm Frame)
	CW400	Concealed Coupler
	DF703	135mm Subcill (75mm)

Illustration	Part No.	Description
	DF704	155mm Subcill (75mm)
	DF705	190mm Subcill (75mm)
	DF713	100mm Subcill (75mm)
	DF716	90mm Subcill (52mm)
	DF717	125mm Subcill (52mm)
	DF718	145mm Subcill (52mm)
	DF719	180mm Subcill (52mm)
	M995	Low Threshold Base
	M996	Low Threshold Tray

Parts List

NOTE - 'A' and 'B' ref in brackets after some profiles relates to reference for SP/SP finish only

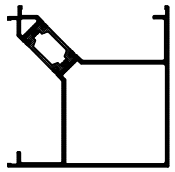
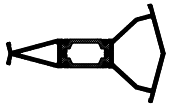
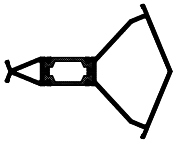
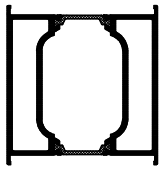
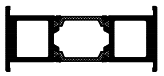
Illustration	Part No.	Description
	UF500	90° Corner Post
	UF500-A	External - 90° Corner Post
	UF500-B	Internal - 90° Corner Post
	UF501	150° Baypole
	UF502	135° Baypole
	UF503	75mm Heavy Duty Coupler
	UF504	25mm Heavy Duty Coupler

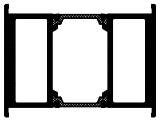
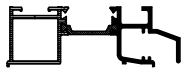
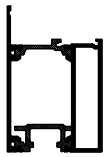
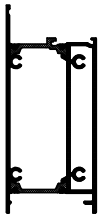
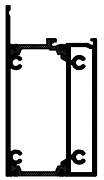
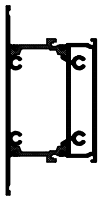
Illustration	Part No.	Description
	UF505	50mm Heavy Duty Coupler
	UF508	Trickle Vent Body (75mm Frame)
	UF509	25mm (52-75mm) Coupler
	UF510	Frame Extender (15mm)

Illustration	Part No.	Description
Door Leaf Profiles		
	CD102	Door Stile
	CD102-A	Door Stile (Open Out)
	CD102-B	Door Stile (Open In)
	CD103	Door Bottom Rail
	CD103-A	Door Bottom Rail (Open Out)
	CD103-B	Door Bottom Rail (Open In)
	CD104	Door Top Rail
	CD104-A	Door Top Rail (Open Out)
	CD104-B	Door Top Rail (Open In)
	CD105	Door Midrail (100mm)
	CD105-A	Door Midrail (100mm) (Open Out)
	CD105-B	Door Midrail (100mm) (Open In)

Parts List

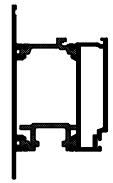
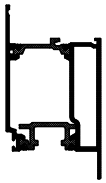
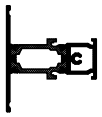
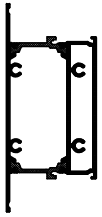
Illustration	Part No.	Description
	CD106	Door Meeting Stile Master
	CD106-A	Door Meeting Stile Master (Open Out)
	CD106-B	Door Meeting Stile Master (Open In)
	CD107	Door Meeting Stile Slave
	CD107-A	Door Meeting Stile Slave (Open Out)
	CD107-B	Door Meeting Stile Slave (Open In)
	CD108	Door Laybar
	CD108-A	Door Laybar (Open Out)
	CD108-B	Door Laybar (Open In)
	CD109	Door Midrail (110mm)
	CD109-A	Door Midrail (110mm) (Open Out)
	CD109-B	Door Midrail (110mm) (Open In)

Illustration	Part No.	Description
Glazing Beads		
	CW068	24mm Glazing Bead
	CW069	28mm Glazing Bead
	CW082	Full Slope 24mm Glazing Bead
	CW084	Square 24mm Glazing Bead
	CW085	Square 28mm Glazing Bead
Gaskets & Weatherseals		
	CDC142	Special Wedge Gasket (2mm Tear Off Strip) (7M)
	CDC145	Self Adhesive 2mm Retained Gasket (7M)

Illustration	Part No.	Description
	CDC146	Self Adhesive 4mm Retained Gasket (7M)
	CDC147	7mm Pile 4.8mm Backing (7M)
	CDC232	Low Threshold Flipper Seal (1.2M)
	CWC055	2mm Retained Security Gasket (7M)
	CWC070	2mm Retained Security Gasket (Hard Back) (7M)
	DFC1103	Frame/Vent Seal (7M)
	DFC1208	Flipper Seal (Hard Back) (7M)
	DFC1450	7mm Pile With Fin 4.8mm Backing (13M)
	W263	4-5mm Wedge Gasket (100M)

Parts List

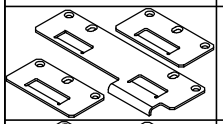
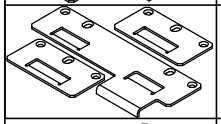
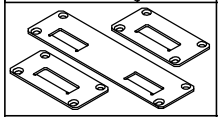
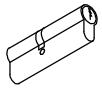
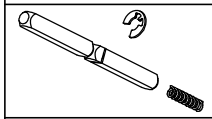
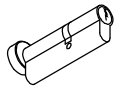
Illustration	Part No.	Description
Hardware		
	CDC131	Crown Door Standard Spindle
	CDC136	Double Door Flushbolt
	CDP122	52mm Frame Single Door Lock Keep Pack (LHOO/RHOI)
	CDP124	75mm Frame Single Door Lock Keep Pack (LHOO/RHOI)
	CDP127	Double Door Lock Keep Pack
	CDP130	BS Kitemark 80mm (35/45) Cylinder & Keys
	CDP132	Crown Door Split Spindle
	CDP133	Open Out BS Kitemark 80mm (35/45) Thumbturn & Keys

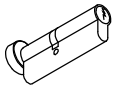
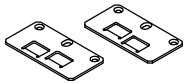
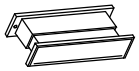
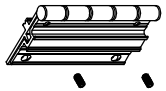
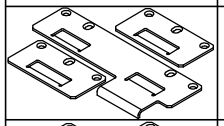
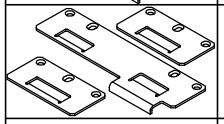
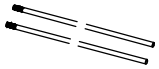
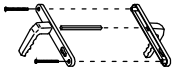
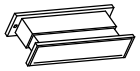
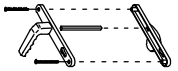
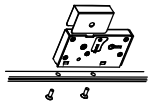
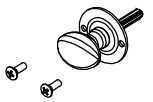
Illustration	Part No.	Description
	CDP134	Open In BS Kitemark 80mm (35/45) Thumbturn & Keys
	CDP135	Double Door Flush/Shootbolt Keep Pack
	CDP144	Slim Letterplate 40-80mm
	CDP150	Crown Door Hinge Pack
	CDP222	52mm Frame Single Door Lock Keep Pack (LHOI/RHOO)
	CDP224	75mm Frame Single Door Lock Keep Pack (LHOI/RHOO)
	CDP233	Slave Leaf Shootbolt Accessory Pack
	CDP252	Shootbolt Rod Pack

Illustration	Part No.	Description
	CDP253	Security Block Pack
	DFP220	Lever/Lever Door Handle
	DFC250	3 Hook Multi Point Lock
	DFP630	Letterplate 40-80mm
	DFP1221	Lever/Pad Door Handle
	DFP1604	Auxiliary Lock With Screws (Pack 10)
	DFP1640	Key Cover Escutcheon with Screws (Pack 10)
	DFP1641	Thumbturn With Screws (Pack 10)
	DFC1668	Shootbolt Gearbox

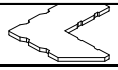
Parts List

Accessory Packs

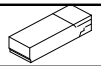
CDP110
Crown Door - 52mm Outerframe Accessory Pack

Quantity	Part No.	Description	Illustration
8	F139	No. 10 x 2 1/2" Csk Pozi Self Tapper (SS)	Used on Outerframe Corner Joints
8	CDC141	Corner Cleat	

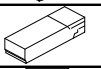
CDP111
Crown Door - 75mm Outerframe Accessory Pack

Quantity	Part No.	Description	Illustration
8	F139	No. 10 x 2 1/2" Csk Pozi Self Tapper (SS)	Used on Outerframe Corner Joints
8	CWC051	Corner Cleat	

CDP112
Crown Door - Master Door Leaf Accessory Pack

Quantity	Part No.	Description	Illustration
8	CDC140	Stile To Rail Packer	
16	ST10112XPSS	No. 10 x 11/2" Torx Pan Self Tapper (SS)	Used on Rail To Stile Joints
4	MM512CPTLSS	M5 x 12 Csk Pozi Machine Screw (SS)	Used on Hinge To Stile Fixings
12	ST858CPSS	No. 8 x 5/8" Csk Pozi Self Tapper (SS)	Used on Hinge To Stile/Jamb Fixings
16	CPC109/BK	9.5mm Hole Plug (Black)	
16	CPC109/W	9.5mm Hole Plug (White)	
2	DFC150/BK	Drain Hole Cover (Black)	
2	DFC150/W	Drain Hole Cover (White)	
2	202/481	Glazing Packers	
12	DFC1699	4.3 x 25mm Csk Pozi Polyamide Self Drill Self Tapper	Used on Lock To Stile Fixings
2	CDC234	Stile Foam Plug 'A'	
2	CDC235	Stile Foam Plug 'B'	
4	NM5ZN	M5 Nutsert	

CDP113
Crown Door - Slave Door Leaf Accessory Pack

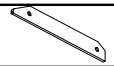
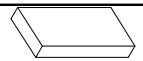
Quantity	Part No.	Description	Illustration
8	CDC140	Stile To Rail Packer	
16	ST10112XPSS	No. 10 x 11/2" Torx Pan Self Tapper (SS)	Used on Rail To Stile Joints
4	MM512CPTLSS	M5 x 12 Csk Pozi Machine Screw (SS)	Used on Hinge To Stile Fixings
12	ST858CPSS	No. 8 x 5/8" Csk Pozi Self Tapper (SS)	Used on Hinge To Stile/Jamb Fixings
16	CPC109/BK	9.5mm Hole Plug (Black)	
16	CPC109/W	9.5mm Hole Plug (White)	
2	DFC150/BK	Drain Hole Cover (Black)	
2	DFC150/W	Drain Hole Cover (White)	
2	202/481	Glazing Packers	
2	CDC234	Stile Foam Plug 'A'	
2	CDC235	Stile Foam Plug 'B'	
4	NM5ZN	M5 Nutsert	

Parts List

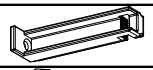
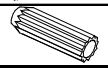
CDP114-1 *(CDP114-10 is CDP114-1 x 10)*
Crown Door - Midrail Accessory Pack

Quantity	Part No.	Description	Illustration
4	ST10112XPSS	No. 10 x 11/2" Torx Pan Self Tapper (SS)	Used on Rail To Stile Joints
4	CPC109/BK	9.5mm Hole Plug (Black)	
4	CPC109/W	9.5mm Hole Plug (White)	
4	ST858CPSS	No. 8 x 5/8" Csk Pozi Self Tapper (SS)	Used on Letter Plate (If Fitted)
4	CDC140	Stile To Rail Packer	
2	202/481	Glazing Packers	
4	ST1034CPSS	NO. 10 X 3/4" Csk Pozi Self Tapper (SS)	For Concealed Joint CDC140 to Rail
4	ST834PPSS	No. 8 x 3/4" Pan Pozi Self Tapper (SS)	For Concealed Joint Rail To Stile

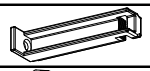
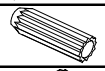
CDP115
Crown Door - Low Threshold Accessory Pack

Quantity	Part No.	Description	Illustration
2	C1688	Low Threshold End Plate	
4	ST638CPSS	No. 6 x 3/8" Csk Pozi Self Tapper (SS)	Used on End Plate Fixing
2	CDC151	Low Threshold Corner Seal	
4	ST101PPSS	No. 10 x 1" Pan Pozi Self Tapper (SS)	Used on Threshold/Jamb Fixing
3	ST812PPSS	No. 8 x 1/2" Pan Pozi Self Tapper (SS)	Used on Low Threshold Seal Carrier Fixing

CDP116
Crown Door - Laybar Joint Accessory Pack

Quantity	Part No.	Description	Illustration
1	ST61PPSS	No. 6 x 1" Pan Pozi Self Tapper (SS)	Used with CWC076
1	CWC076	Cruciform Bracket 'B'	
1	ST638CPSS	No. 6 x 3/8" Csk Pozi Self Tapper (SS)	Used with CWC059
1	CWC059	Cruciform Bracket 'A'	
1	DFC1071	Drive In Pin	

CDP117
Crown Door - Laybar Cruciform Joint Acc Pack

Quantity	Part No.	Description	Illustration
1	ST6112CPSS	No. 6 x 1 1/2" Csk Pozi Self Tapper (SS)	Used with CWC059
1	CWC076	Cruciform Bracket 'B'	
1	ST660PPSS	No. 6 x 60 Pan Pozi Self Tapper (SS)	Used with CWC059
1	CWC059	Cruciform Bracket 'A'	
1	DFC1071	Drive In Pin	
1	CWC056	Transom Moulding	

CDP183-1 *(CDP183-10 is CDP183-1 x 10)*
Crown Single Door - Concealed Rail Fixing Pack

Quantity	Part No.	Description	Illustration
8	CDC180	Rail Joint Tapping Plate	
2	CDC181	Top Rail Clamp Plate	
2	CDC182	Btm Rail Clamp Plate	
8	MM635SCTLSS	M6 x 35 Socket Cap TUF-LOK S/Steel Machine Screw	Used on Rail Fixing

CDP184-1 *(CDP184-10 is CDP184-1 x 10)*
Crown Double Door - Concealed Rail Fixing Pack

Quantity	Part No.	Description	Illustration
16	CDC180	Rail Joint Tapping Plate	
4	CDC181	Top Rail Clamp Plate	
4	CDC182	Btm Rail Clamp Plate	
16	MM635SCTLSS	M6 x 35 Socket Cap TUF-LOK S/Steel Machine Screw	Used on Rail Fixing

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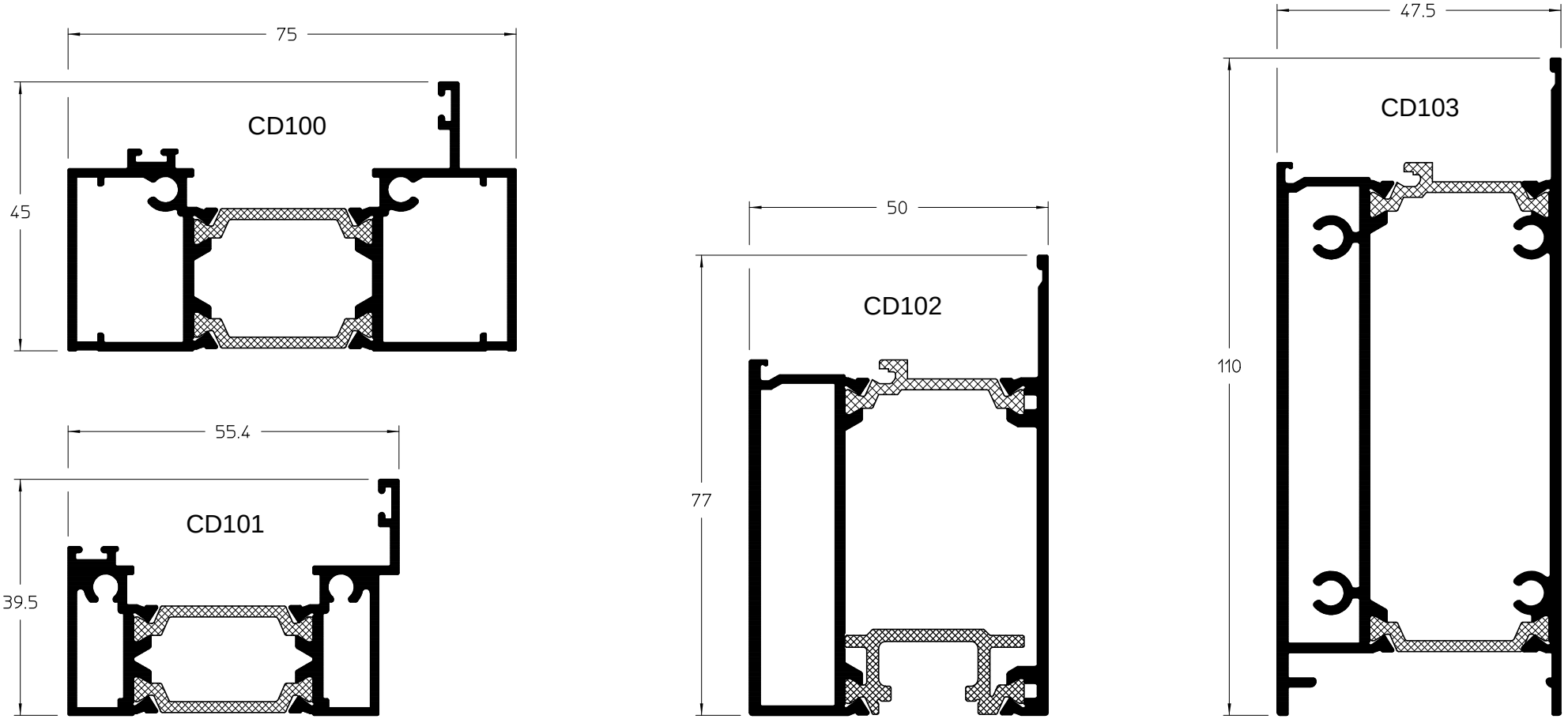
Parts List

Illustration	Part No.	Description
Tooling		
	CDC152	Drill Jig Outerframe Corner Joints
	CDC153	Drill Jig Leaf Hinges & Outerframe Drainage
	CDC154	Drill Jig Outerframe Hinges
	CDC155	Drill Jig Rail & Stile Holes For Laybars
	CDC158	Drill Jig Low Threshold Corner Joints
	CDC159	Drill Jig Top Rail Stile Holes - Jig 1
	CDC160	Drill Jig (CD107) Top Rail Stile Holes - Jig 1
	CDC161	Drill Jig Top Rail Stile Holes - Jig 2

Illustration	Part No.	Description
	CDC162	Drill Jig Mid Rail Stile Holes

Notes

Profile Identification



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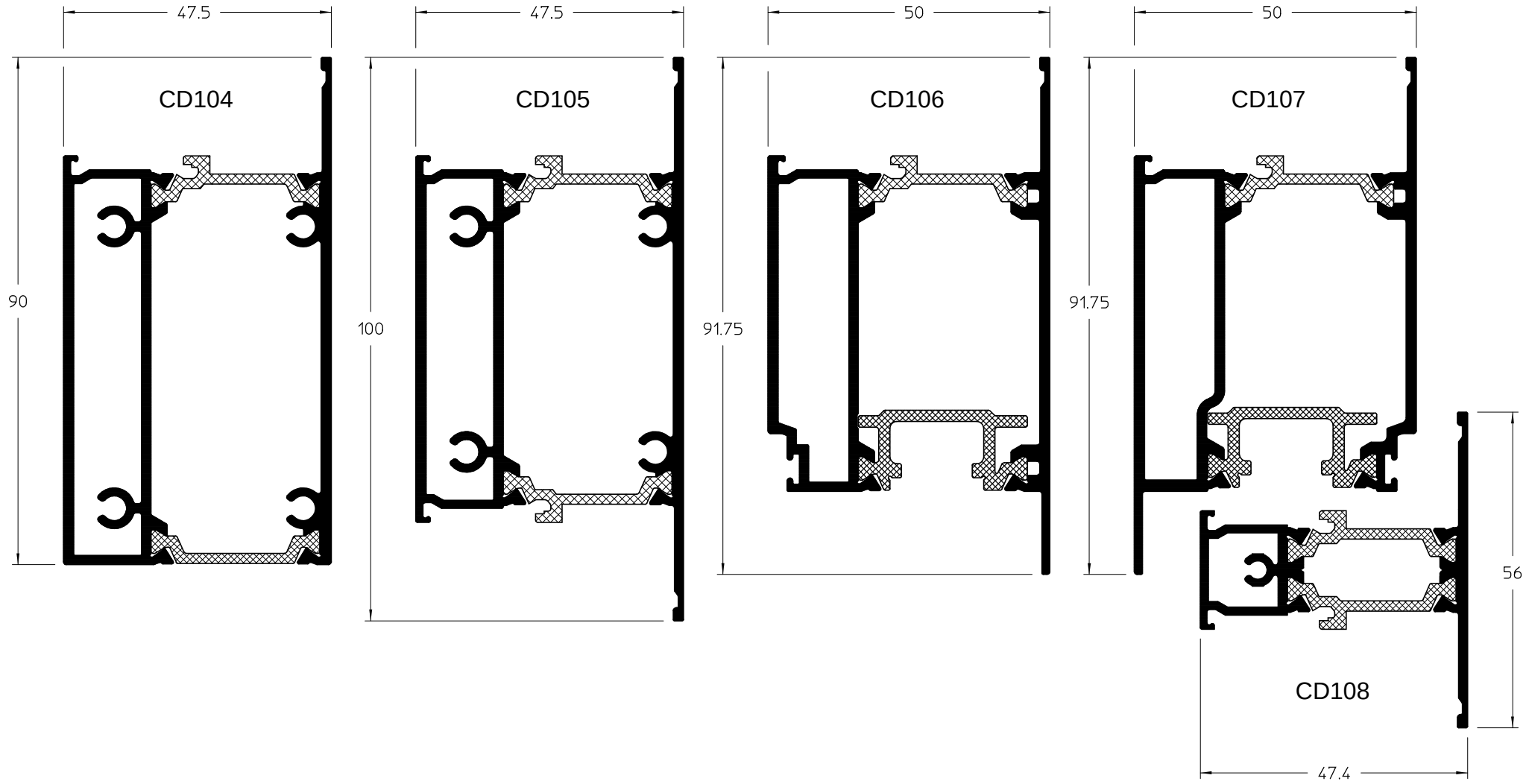

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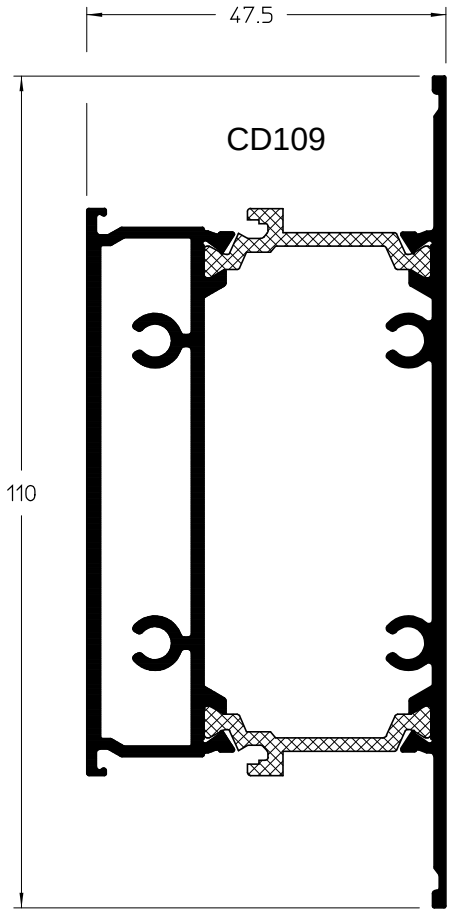
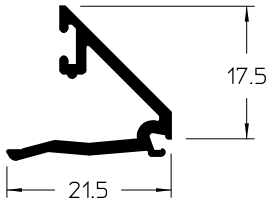


Profile Identification

CW068



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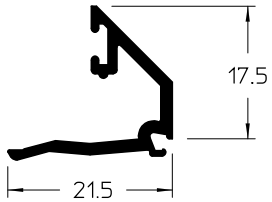

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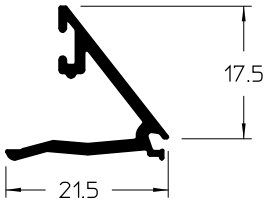
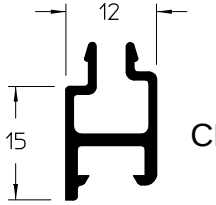
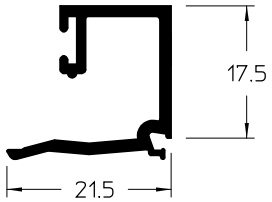


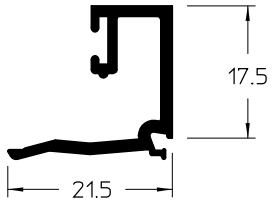


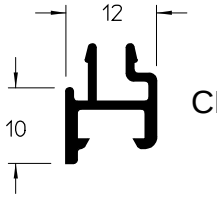
CDP11

CW084



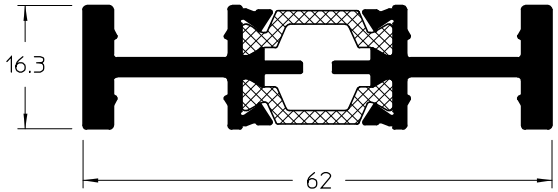
CW085



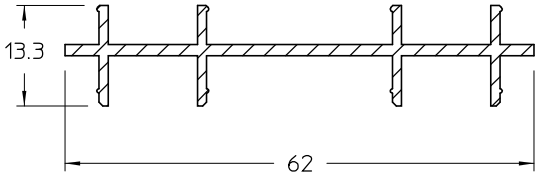


CDP12

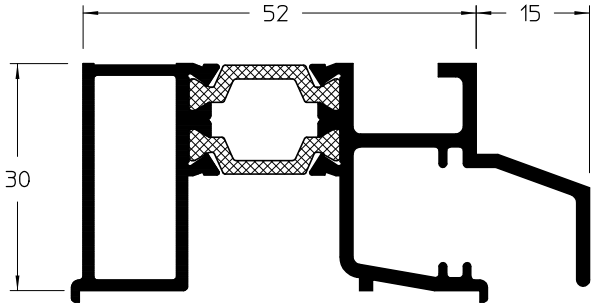
CW400



CW108



CW313



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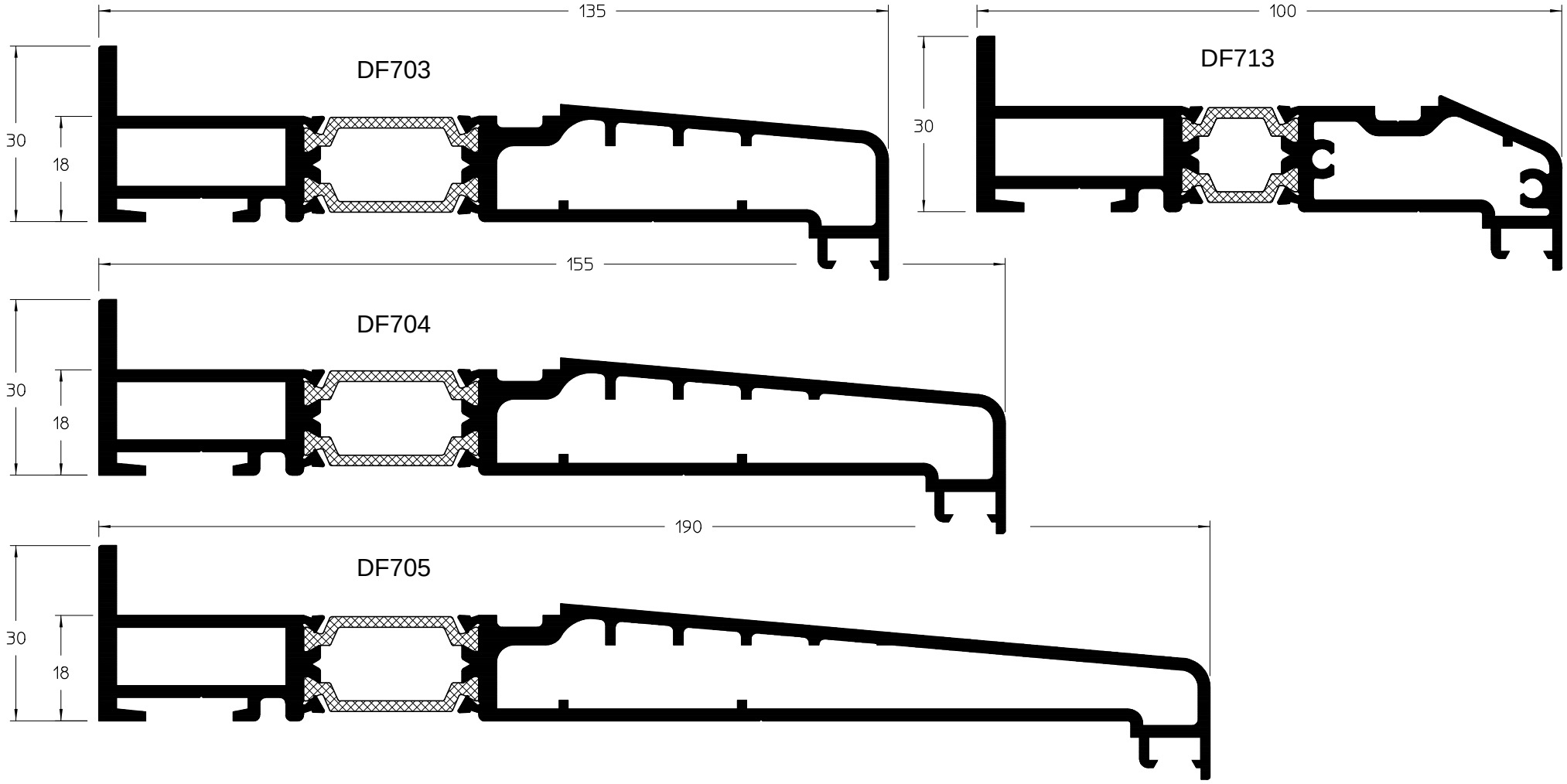

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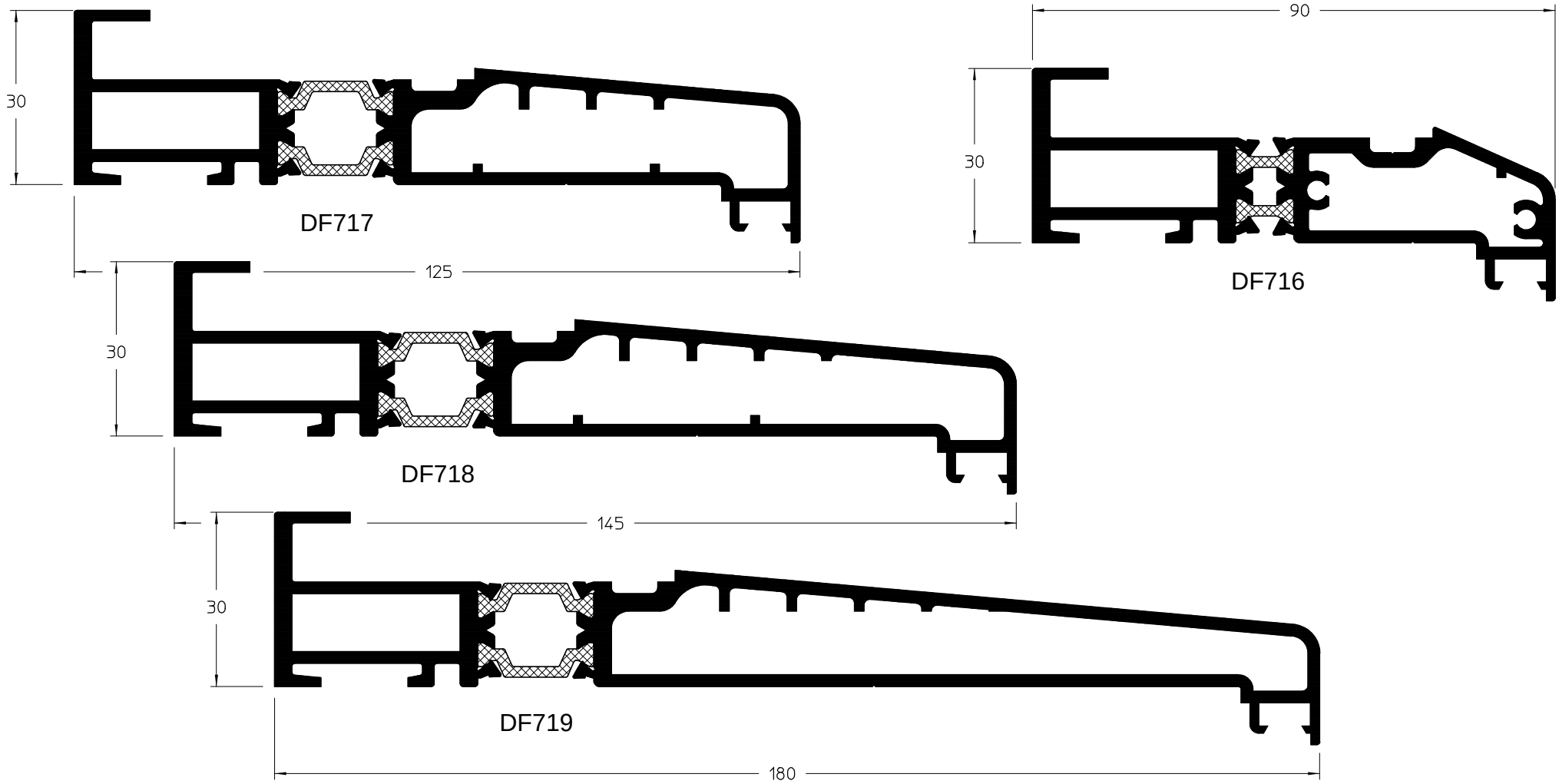

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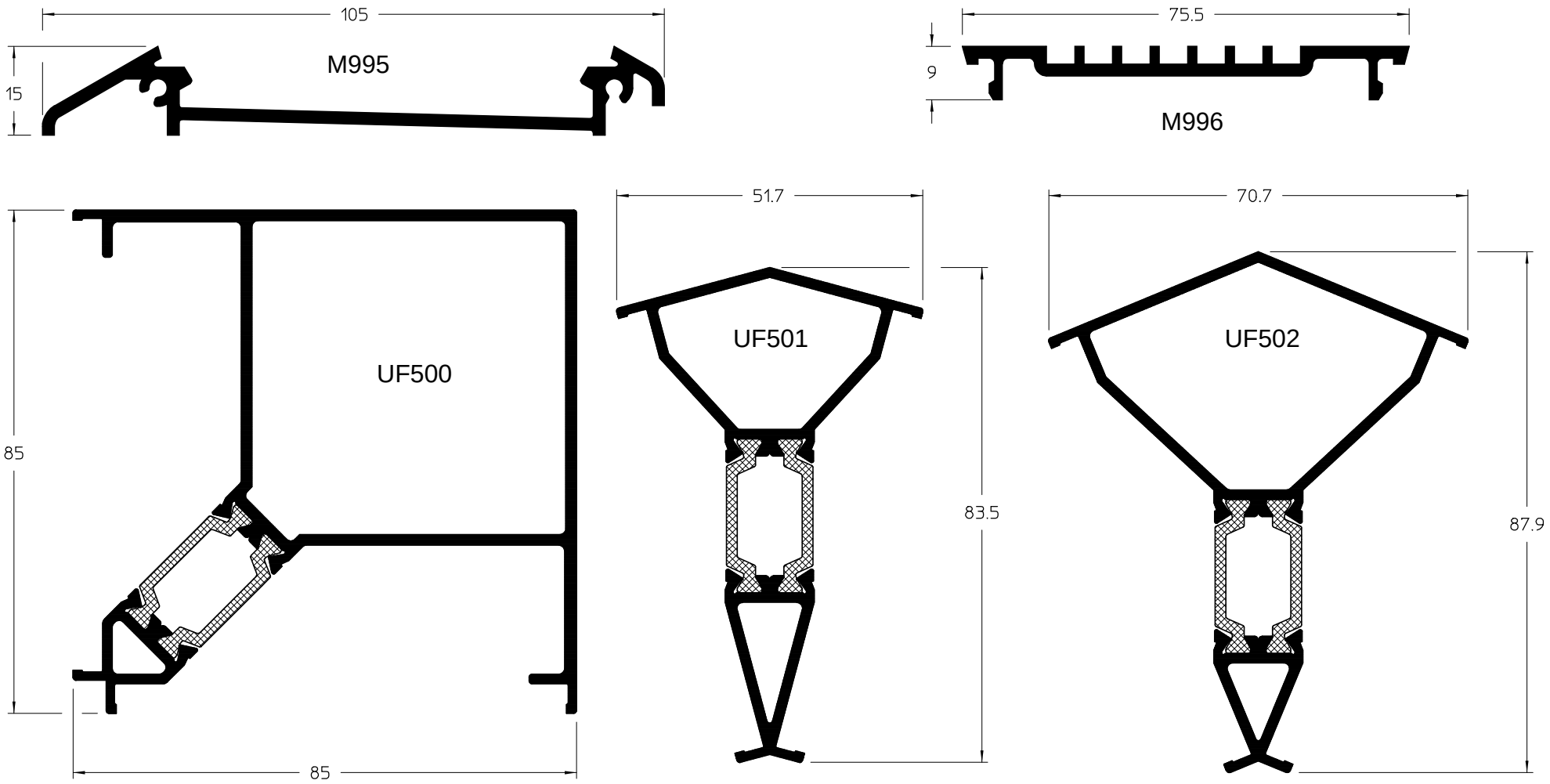

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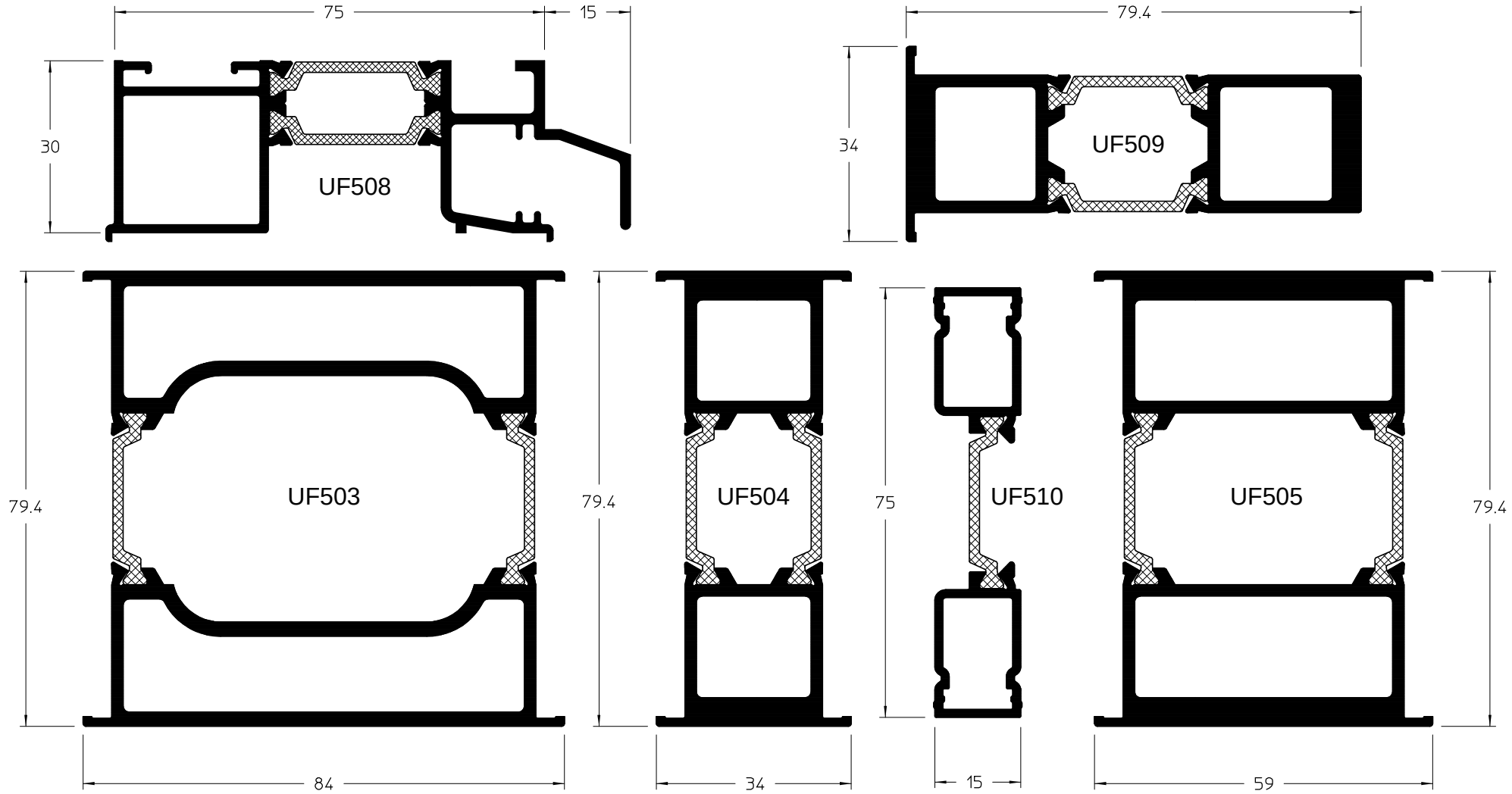


Preparation for Fabrication

Establishing Dimensions

It is essential that work sizes are based on correct site dimensions and with adequate clearances around the door to allow for correct positioning/fixing. Where separate units are coupled together using a coupling mullion, the relevant gap must be allowed .

Preliminaries

Ensure that the door design is within the parameters given in the specification. Ascertain the vertical and horizontal work sizes for each individual door unit. Consideration must be given to any head or cill conditions which will affect the work size height. Ascertain the basic door design i.e. Left hand or right hand hung viewed from outside, handing of master leaf, midrail height position.

The correct profile required can be calculated using BS6399:Part 2 and inertia value calculation sheet on page 2-18. Ascertain the type of outerframe which is needed so that the appropriate profile can be used.

Metal and Glass Cutting

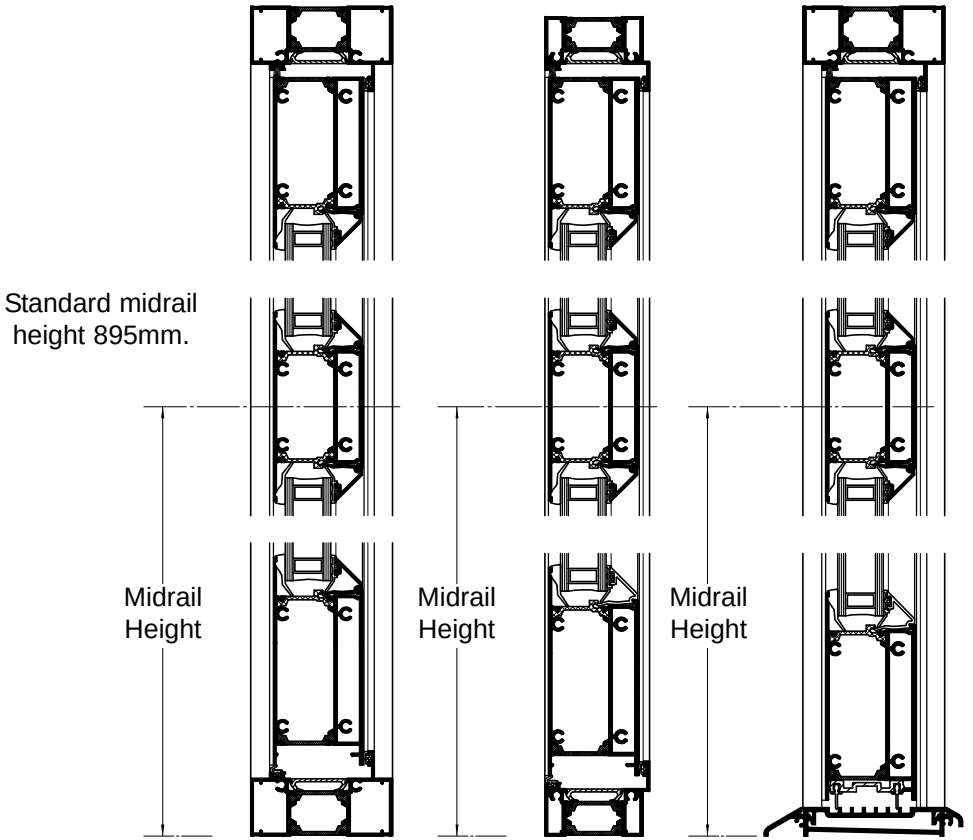
Refer to the data and diagrams on the subsequent pages to determine all bar lengths and glass sizes.

When calculating bar lengths requirements, an allowance of 37mm at each end of the bar must be made for any profile which has powder coat or anodised finish to allow for jig/contact marks. These marks must be removed individually or as part of the first and last cut whether square or mitred.

Details of actual end preparation required, Square/Mitred are fully detailed for individual profiles on the following pages. Also detailed are the position and size of any holes and the appropriate tooling.

Midrail Height

For info, CD105 (shown) & CD109 Midrail heights are taken from the centre line of the midrail to the underside of the cill/low threshold and does not include subcills.



Cutting Sizes

Cutting Calculations Standard Door

Component sizes are calculated from the table shown on this page, laybar calculations are on page 4-4.
Bead sizes shown are actual sizes, but we recommend that they are cut oversize and trimmed to fit.
'W' refers to overall frame width, 'H' refers to overall frame height, 'MH' refers to the midrail height.

Metal tolerance of plus or minus 0.5mm
Glass tolerance of plus 0mm, minus 3.0mm

			52mm Outerframe		75mm Outerframe		75mm Outerframe With Low Threshold		
	Profile	**Component**	**Single Door**	**Double door**	**Single Door**	**Double door**	**Single Door**	**Double door**	**End Cut**
	CD100, CD101	Head/Cill (L/T Head)	W	W	W	W	W	W	45°/45°
	CD068	Low Threshold	-	-	-	-	W	W	90°/90°
	CD100, CD101	Jambs	H	H	H	H	-	-	45°/45°
	CD100	L/T Door Jambs	-	-	-	-	H-15	H-15	45°/90° (Handed)
	CD102, CD106, CD107	Stiles	H-64	H-64	H-75	H-75	H-56.5	H-56.5	90°/90°
	CD103, CD104, CD105, CD109	Rails	W-185	(W-312)/2	W-196	(W-323)/2	W-196	(W-323)/2	90°/90°
	CD075	Horizontal Infill Trim	W-39	W-39	W-50	W-50	W-50	W-50	90°/90°
	CD075	Vertical Infill Trim	H-50	H-50	H-61	H-61	H-46	H-46	90°/90°
	C1630	Stile Pocket Trim	H-64	H-64	H-75	H-75	H-56.5	H-56.5	90°/90°
	CD076	L/T Seal Carrier	-	-	-	-	W-77	(W-87)/2	90°/90°
	CW068, CW069, CW082 CW084, CD085	Horizontal Beads	W-185	(W-312)/2	W-196	(W-323)/2	W-196	(W-323)/2	90°/90°
	Glazing	Horizontal Glass	W-195	(W-332)/2	W-206	(W-343)/2	W-206	(W-343)/2	
Door without midrail	**CW068**	Vertical Bead	H-236	H-236	H-247	H-247	H-228.5	H-228.5	45°/45°
	CW069	Vertical Bead	H-244	H-244	H-255	H-255	H-236.5	H-236.5	45°/45°
	CW082	Vertical Bead	H-229	H-229	H-240	H-240	H-221.5	H-221.5	52°/52°
	CW084, CD085	Vertical Bead	H-264	H-264	H-275	H-275	H-256.5	H-256.5	90°/90°
	Glazing	Vertical Glass	H-239	H-239	H-250	H-250	H-231.5	H-231.5	
Door with CD105 midrail **If using CD109 midrail, reduce sizes by a further 5mm**	**CW068**	Top Vertical Bead	H-(MH+144)	H-(MH+144)	H-(MH+149.5)	H-(MH+149.5)	H-(MH+131)	H-(MH+131)	45°/45°
		Btm Vertical Bead	MH-164	MH-164	MH-169.5	MH-169.5	MH-151	MH-151	
	CW069	Top Vertical Bead	H-(MH+152)	H-(MH+152)	H-(MH+157.5)	H-(MH+157.5)	H-(MH+139)	H-(MH+139)	45°/45°
		Btm Vertical Bead	MH-172	MH-172	MH-177.5	MH-177.5	MH-159	MH-159	
	CW082	Top Vertical Bead	H-(MH+137)	H-(MH+137)	H-(MH+142.5)	H-(MH+142.5)	H-(MH+124)	H-(MH+124)	52°/52°
		Btm Vertical Bead	MH-157	MH-157	MH-162.5	MH-162.5	MH-144	MH-144	
	CW084, CD085	Top Vertical Bead	H-(MH+172)	H-(MH+172)	H-(MH+177.5)	H-(MH+177.5)	H-(MH+159)	H-(MH+159)	90°/90°
		Btm Vertical Bead	MH-192	MH-192	MH-197.5	MH-197.5	MH-179	MH-179	
	Glazing	Top Vertical Glass	H-(MH+147)	H-(MH+147)	H-(MH+152.5)	H-(MH+152.5)	H-(MH+152.5)	H-(MH+152.5)	
		Btm Vertical Glass	MH-167	MH-167	MH-172.5	MH-172.5	MH-154	MH-154	

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Cutting Sizes

Cutting Calculations - Laybar

Due to the varying designs available, laybar cutting calculations are formulated from the general arrangements shown on this page.

Note:- These calculations are for equal split glass sizes, and horizontal laybars are to run continuous, with verticals being intermittent.

'W' = overall frame width 'H' = overall frame height
'FW' = frame width 'FH' = frame height

Metal Sizes

Single Door, Horizontal Laybars CD108	'W' - 'FW' - 'FW'
Double Door, Horizontal Laybars CD108	('W' - 'FW' - 'FW' - 'FW') / 2
Vertical Laybars CD108	'H' - 'FH' - 'FH'

Where each horizontal laybar occurs, deduct a further 21mm and divide by number of panes.

Vertical Bead CW068	'Laybar size' - 7
Vertical Bead CW069	'Laybar size' - 15
Vertical Bead CW082	'Laybar size'
Vertical Bead CW084, CW085	'Laybar size' - 35
Horizontal Bead CW068, 069, 082, 084, 085	'Laybar size'

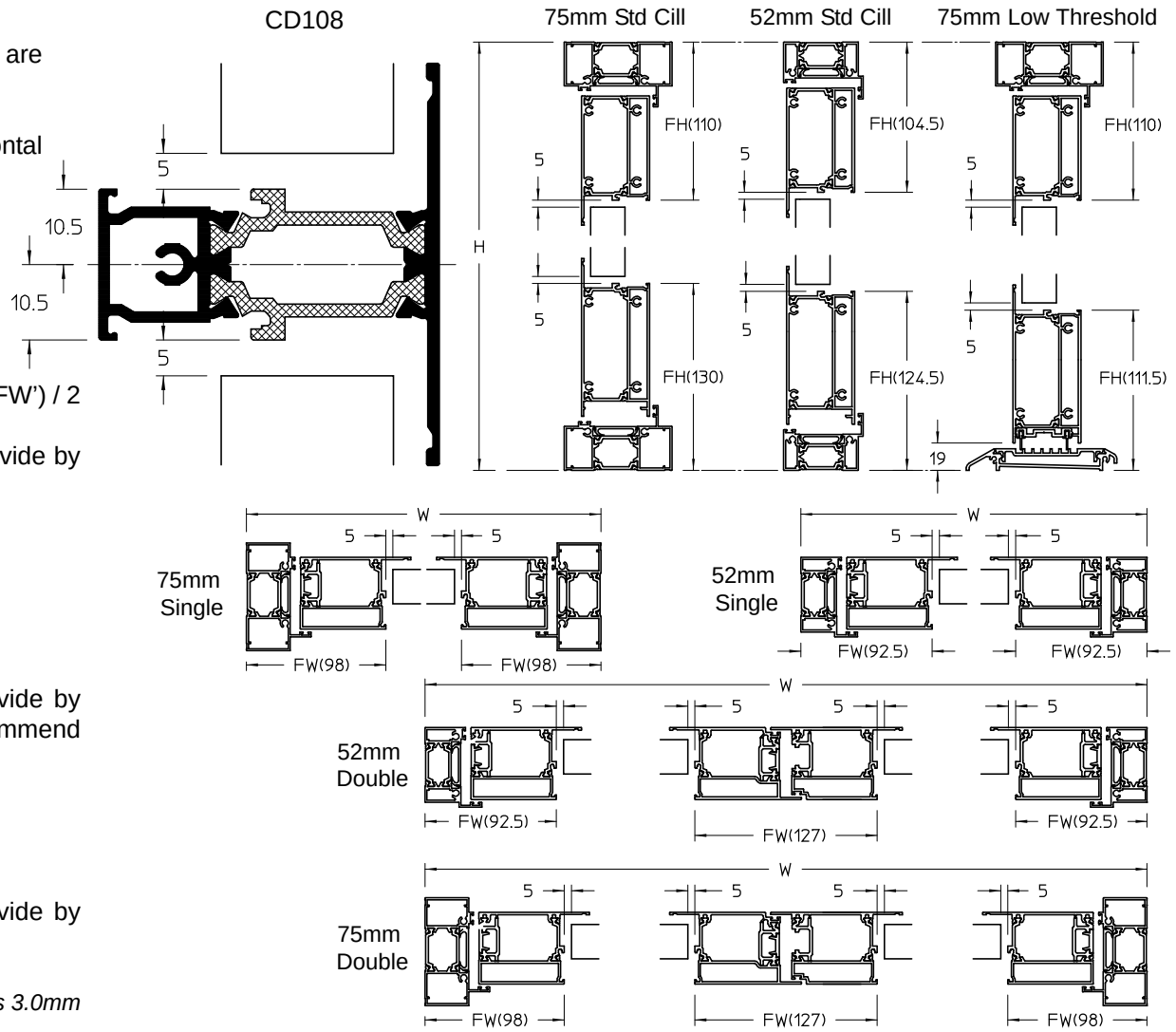
Where each vertical laybar occurs, deduct a further 21mm and divide by number of panes. Bead sizes shown are actual sizes, but we recommend that they are cut oversize and trimmed to fit.

Glass Sizes

Vertical Glass	'Laybar size' - 10
Horizontal Glass	'Laybar size' - 10

Where each vertical laybar occurs, deduct a further 31mm and divide by number of panes.

Metal tolerance of plus or minus 0.5mm, Glass tolerance of plus 0mm, minus 3.0mm



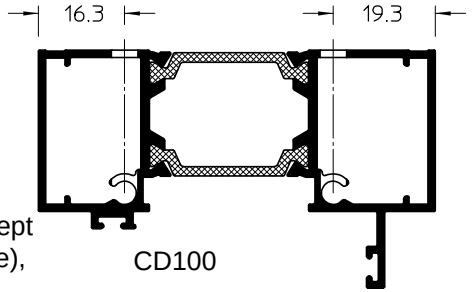
Machining Details - Outerframe

Outerframe Corner Joint

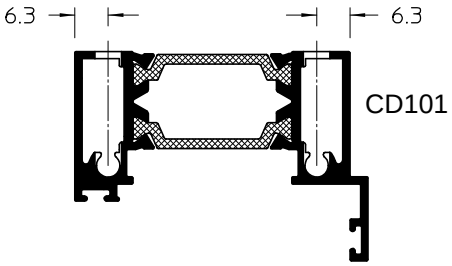
Profile CD100, CD101
Drill Jig CDC152

The preparation shown is for outerframe corner jointing.

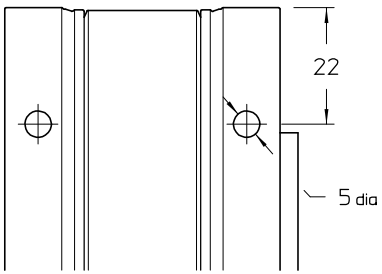
Prepare both ends of the jambs, except on low threshold doors (75mm frame), only prepare top of jambs.

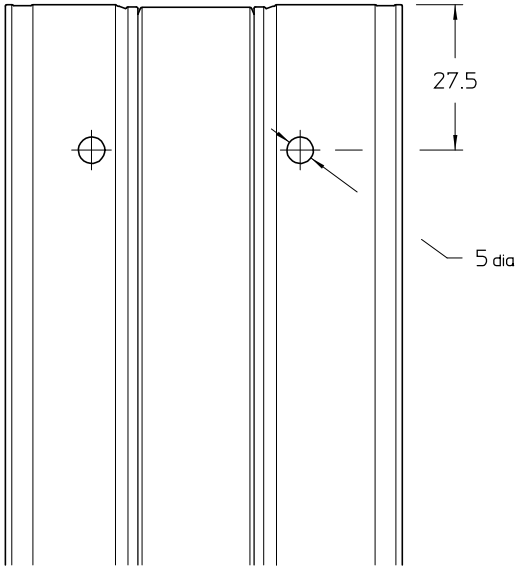


CD100



CD101





Outerframe Pocket Trim Drainage

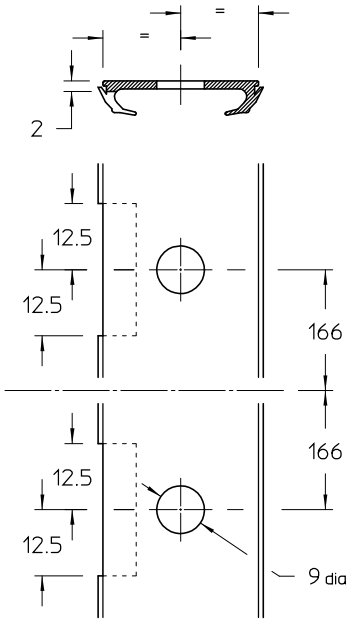
Profile CD075

The preparation shown is to allow water access to outerframe drainage.

Prepare both ends of the cill pocket trim (mirror preparation) for all doors, except low threshold doors.

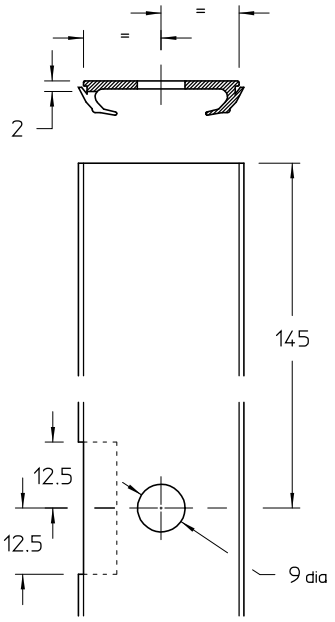
Also prepare centre holes and slots for double doors.

Double door centre prep



Centre line between door leafs

End prep



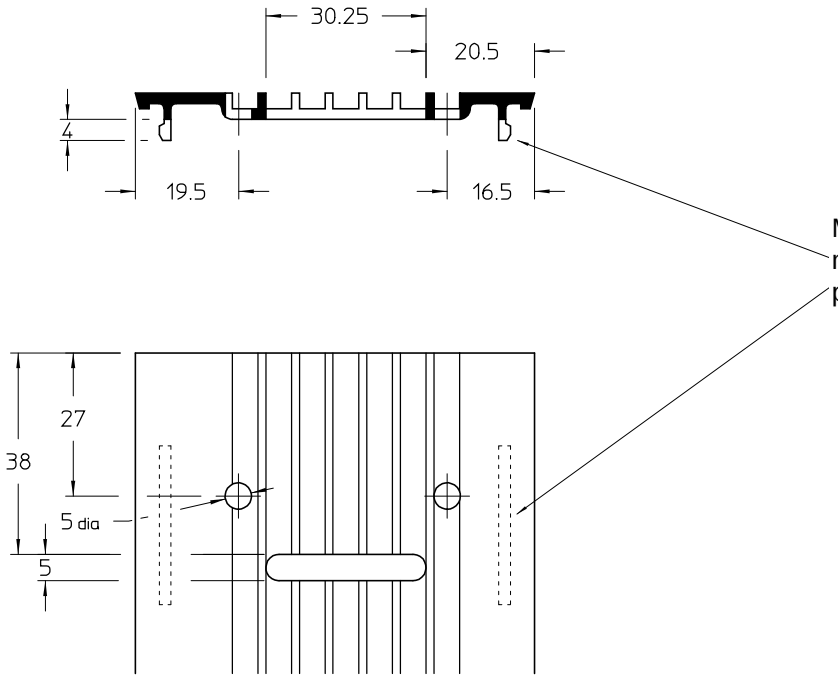
Machining Details - Outerframe

Low Threshold Corner Joint

Profile M996
Drill Jig CDC158

The preparation shown is for drainage into the low threshold base and for jamb fixing.

Prepare both ends of Threshold.



Low Threshold Base Drainage

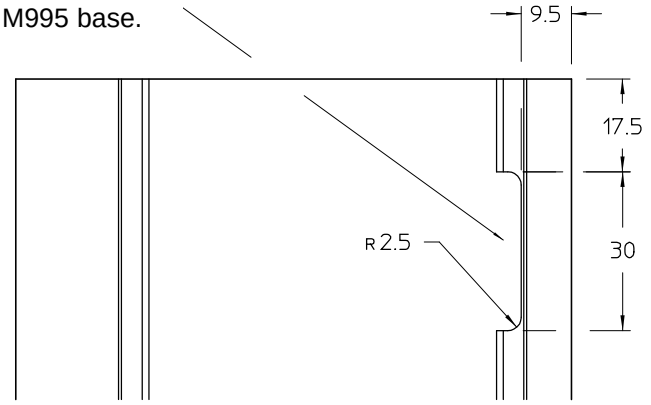
Profile M995

The preparation shown is for low threshold base drainage.

On single doors, one preparation must be carried out at each end with two additional drainage preparations machined equally between the end preparations.

On double doors, one preparation must be carried out at each end with five additional drainage preparations machined equally between the end preparations.

M996 leg cutouts are to be machined in-line with slot positions in M995 base.



Machining Details - Outerframe

Low Threshold Drainage

Profile M996

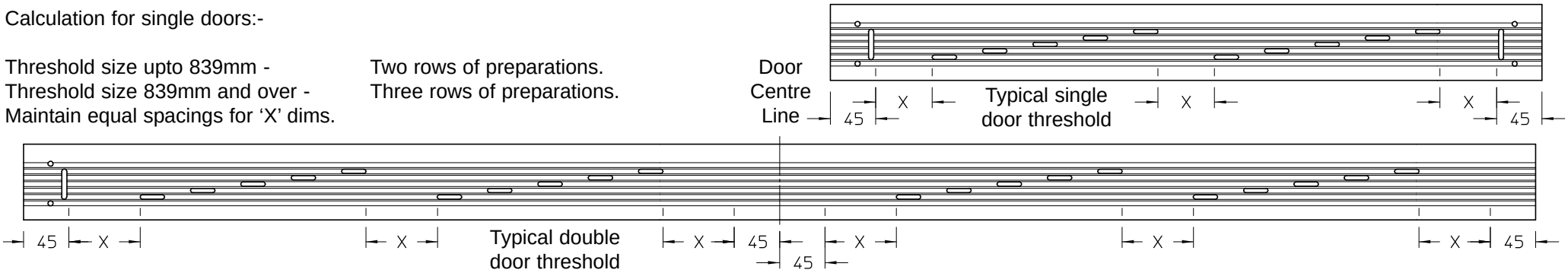
The drainage preparations shown below are to be repeated along the full length of the threshold tray. The number of preparations will vary and the small details are only indicative.

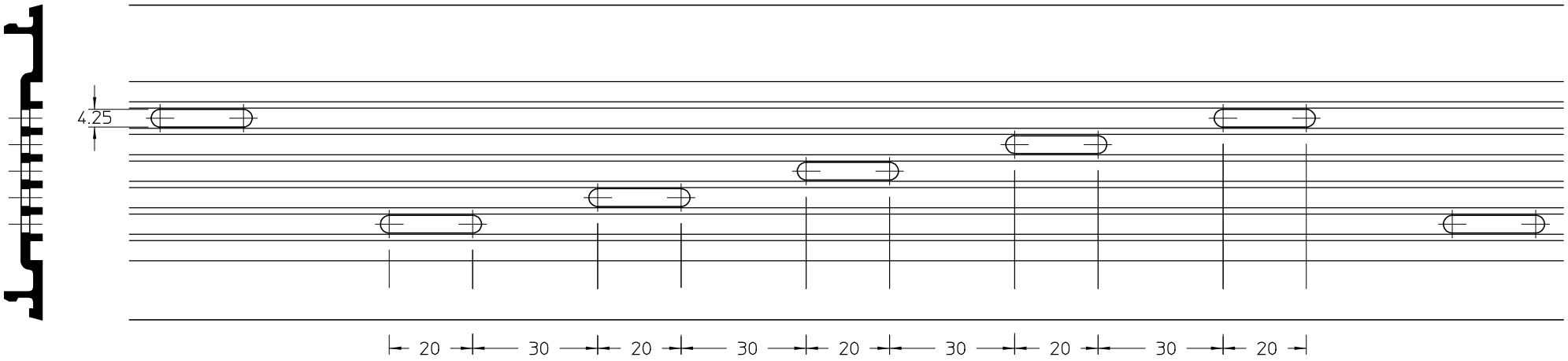
Calculation for single doors:-

Threshold size upto 839mm - Two rows of preparations.
Threshold size 839mm and over - Three rows of preparations.
Maintain equal spacings for ‘X’ dims.

Calculation for double doors (sizes shown are for one half of the threshold):-

Threshold half upto 839mm - Two rows of preparations, per side.
Threshold half 839mm and over - Three rows of preparations, per side.
Maintain equal spacings for ‘X’ dims.





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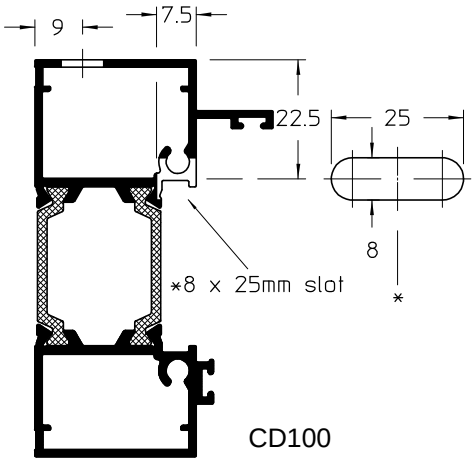
Machining Details - Outerframe

Outerframe Drainage (OPEN IN)

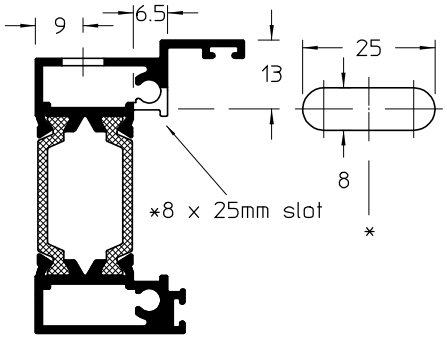
Profile CD100, CD101
Drill Jig CDC153

The preparation shown is for outerframe drainage in the cill.

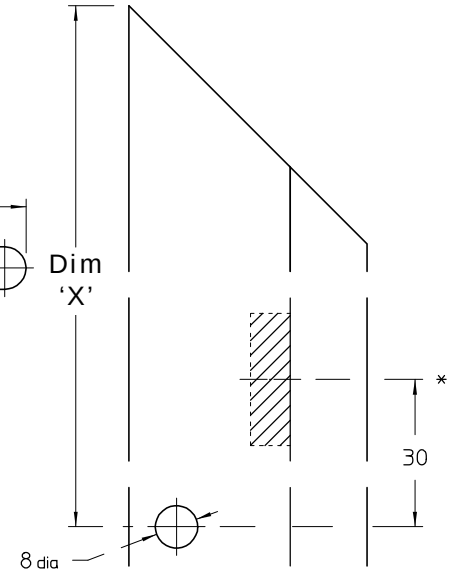
DIM 'X'
200mm (Profile CD100)
194.5mm (Profile CD101)



CD100



CD101

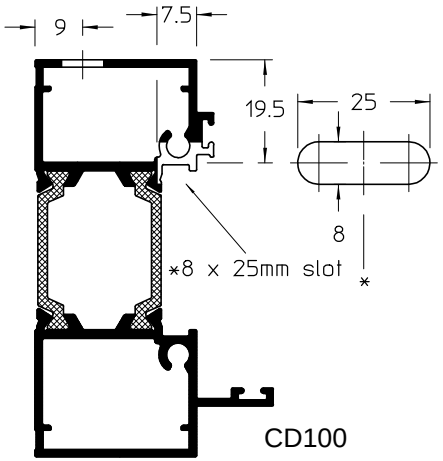


Outerframe Drainage (OPEN OUT)

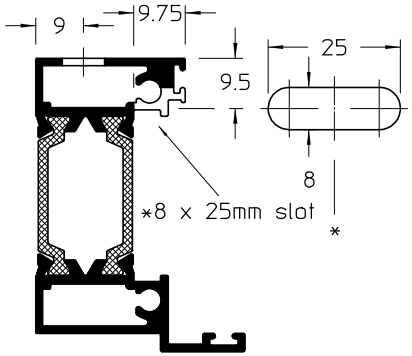
Profile CD100, CD101
Drill Jig CDC153

The preparation shown is for outerframe drainage in the cill.

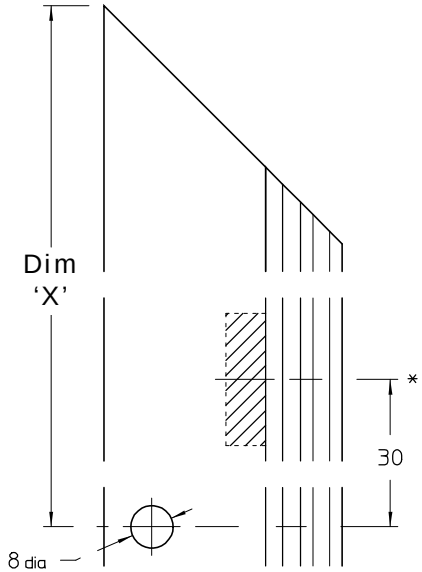
DIM 'X'
200mm (Profile CD100)
194.5mm (Profile CD101



CD100



CD101

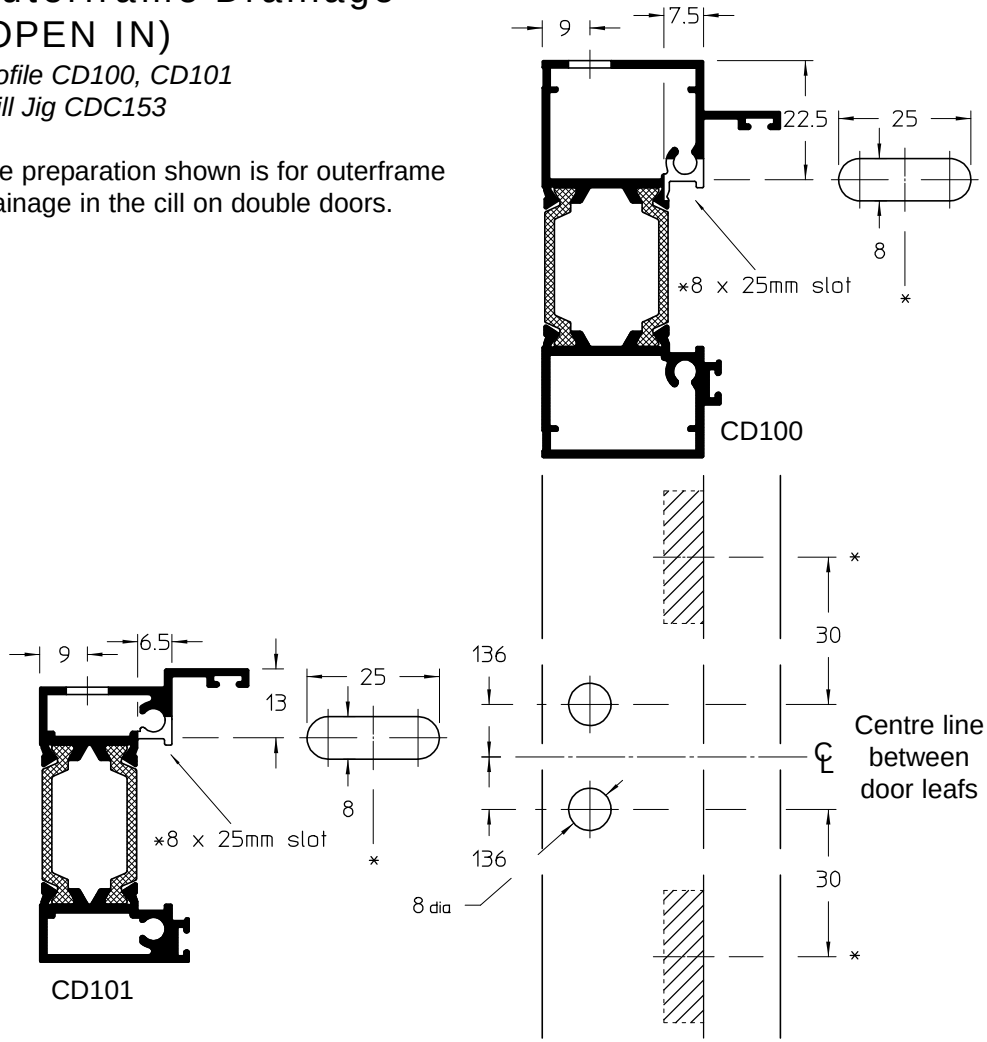


Machining Details - Outerframe

Outerframe Drainage (OPEN IN)

Profile CD100, CD101
Drill Jig CDC153

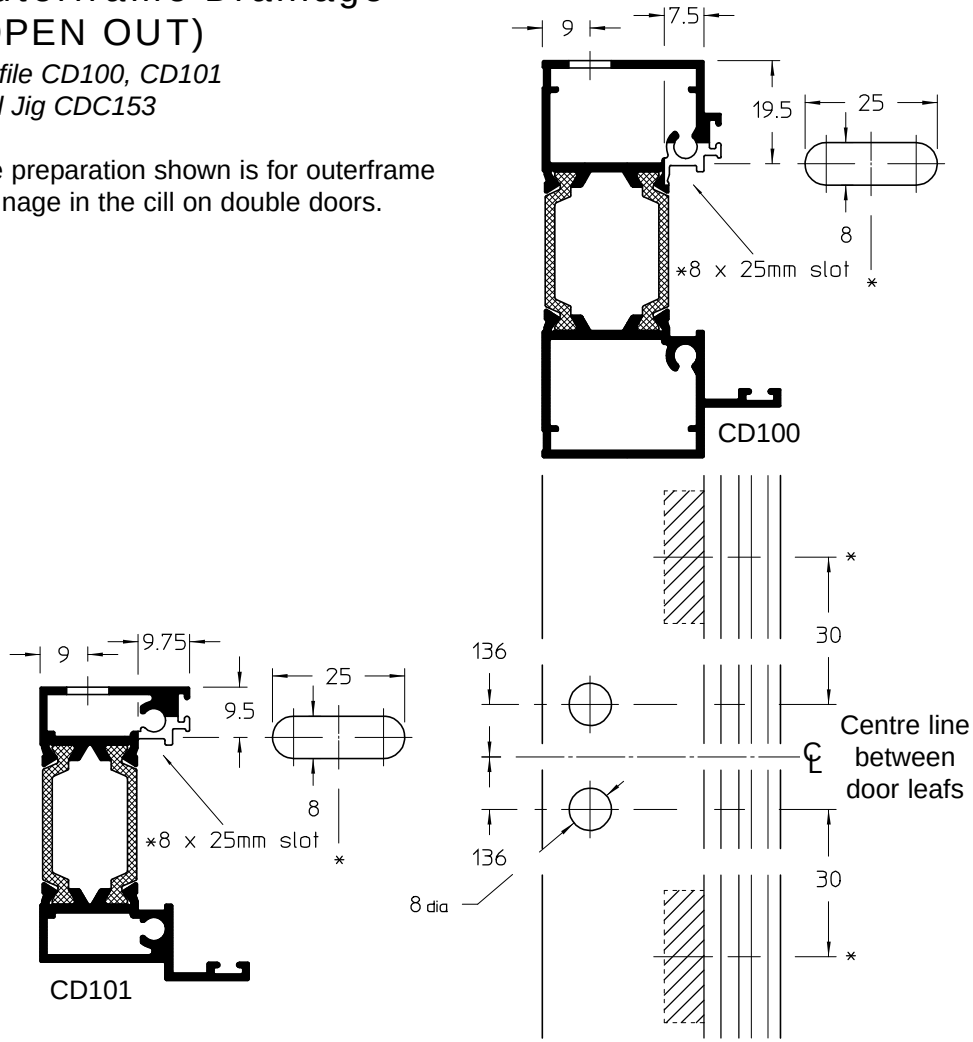
The preparation shown is for outerframe drainage in the cill on double doors.



Outerframe Drainage (OPEN OUT)

Profile CD100, CD101
Drill Jig CDC153

The preparation shown is for outerframe drainage in the cill on double doors.



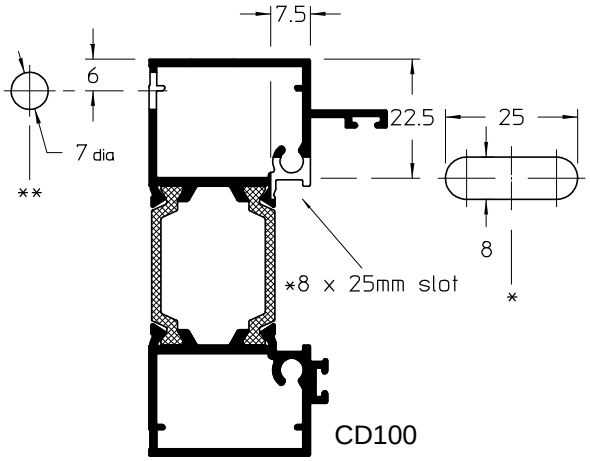
Machining Details - Outerframe

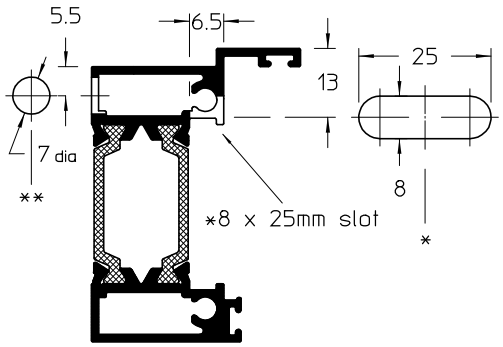
Outerframe Drainage onto subcill (OPEN IN)

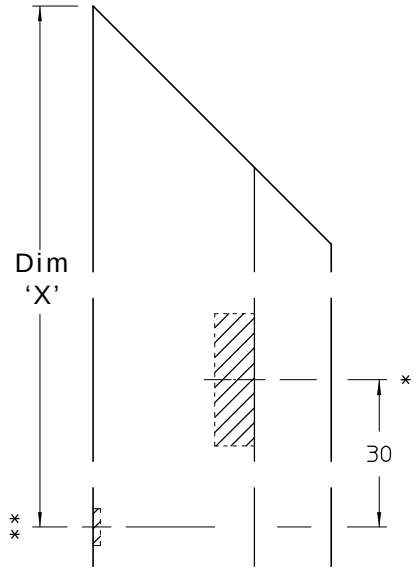
Profile CD100, CD101
Drill Jig CDC153

The preparation shown is for outerframe drainage in the cill.

DIM 'X'
DIM 'X'
200mm (Profile CD100)
194.5mm (Profile CD101





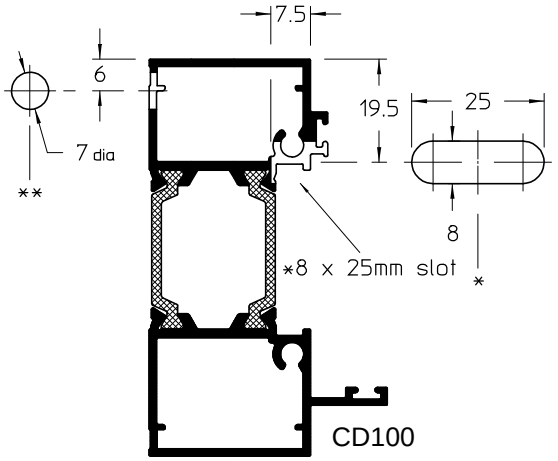


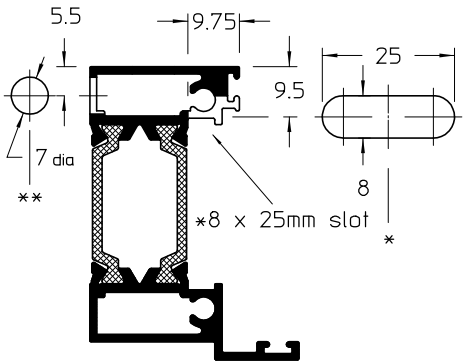
Outerframe Drainage onto subcill (OPEN OUT)

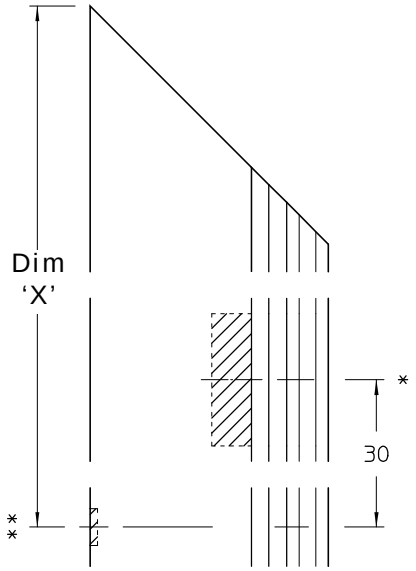
Profile CD100, CD101
Drill Jig CDC153

The preparation shown is for outerframe drainage in the cill.

DIM 'X'
DIM 'X'
200mm (Profile CD100)
194.5mm (Profile CD101





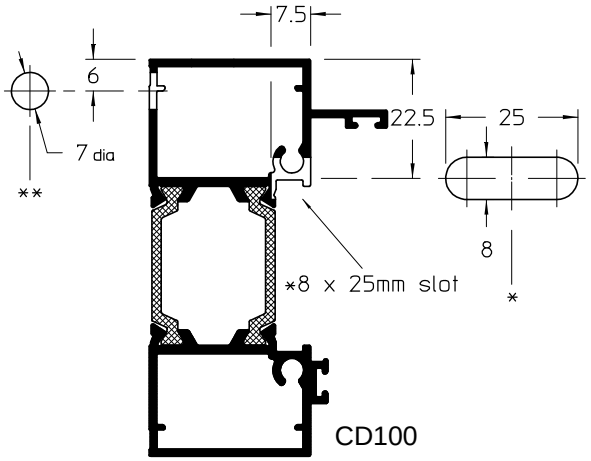


Machining Details - Outerframe

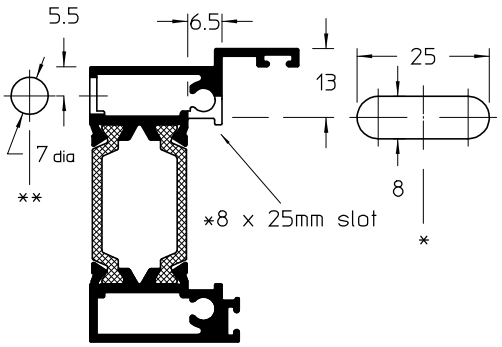
Outerframe Drainage onto subcill (OPEN IN)

Profile CD100, CD101
Drill Jig CDC153

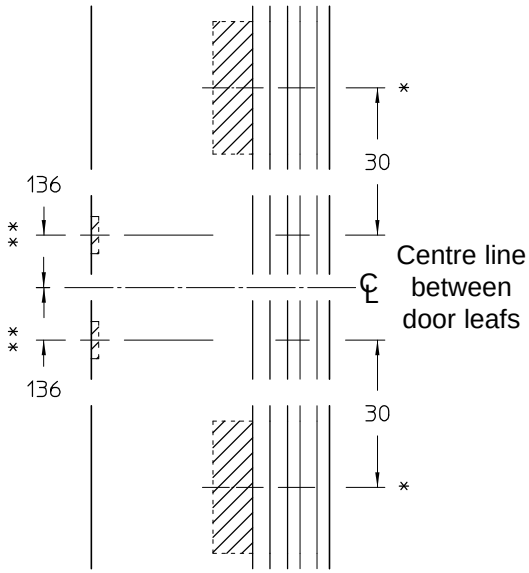
The preparation shown is for outerframe drainage in the cill on double doors.



CD100



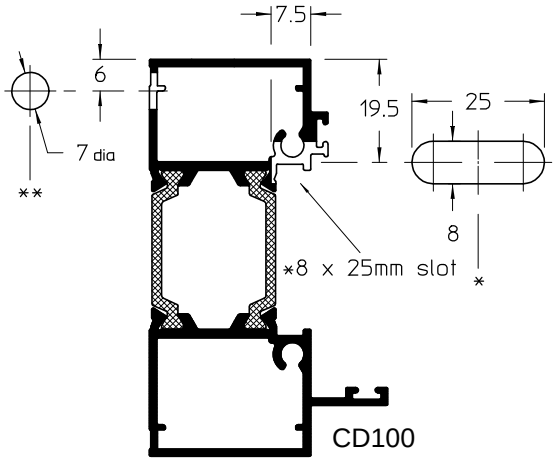
CD101



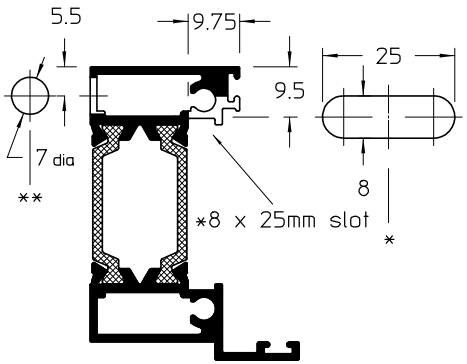
Outerframe Drainage onto subcill (OPEN OUT)

Profile CD100, CD101
Drill Jig CDC153

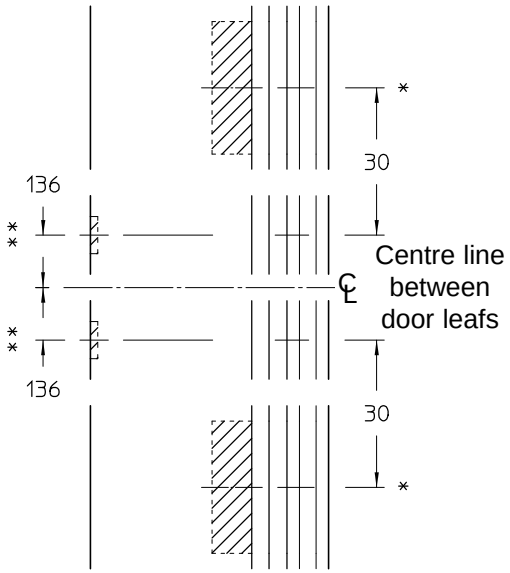
The preparation shown is for outerframe drainage in the cill on double doors.



CD100



CD101



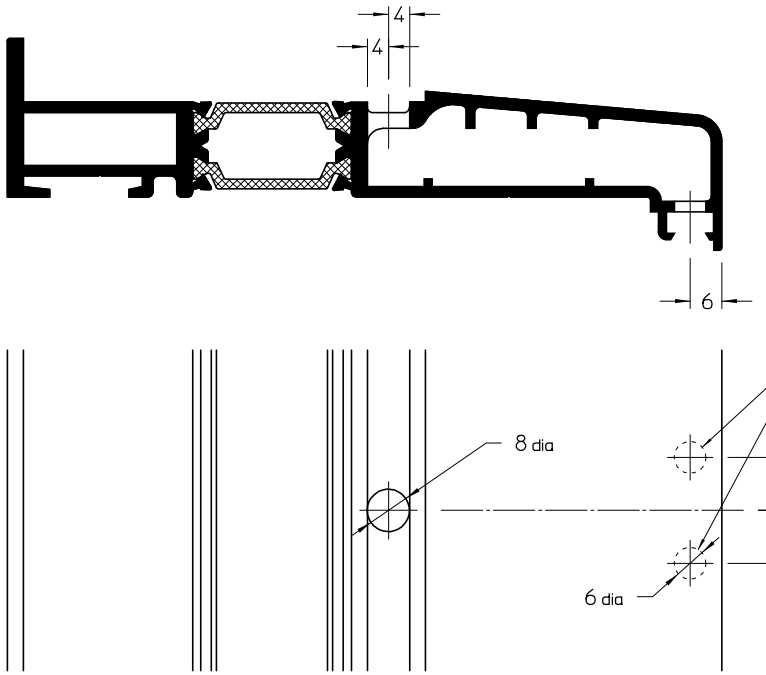
Machining Details - Outerframe

Subcill Drainage

Profile DF703, DF704, DF705, DF713, DF716, DF717, DF718, DF719

The preparation shown is for the drainage of the subcill. These preparations should occur within 150mm of the ends of the subcill, and at no more than 500mm centres.

DF703 shown



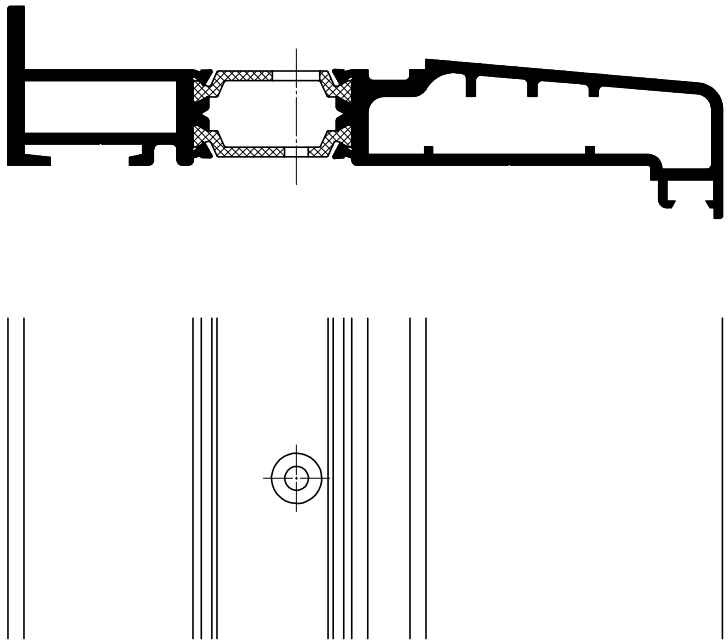
Note: Line up drainage holes in extender profile CDP11 or CDP12 if used.

Subcill Fixing

Profile DF703, DF704, DF705, DF713, DF716, DF717, DF718, DF719

The preparation shown is for direct fixing of the subcill to the structure. Hole centres are job specific along with the hole size.

DF703 shown



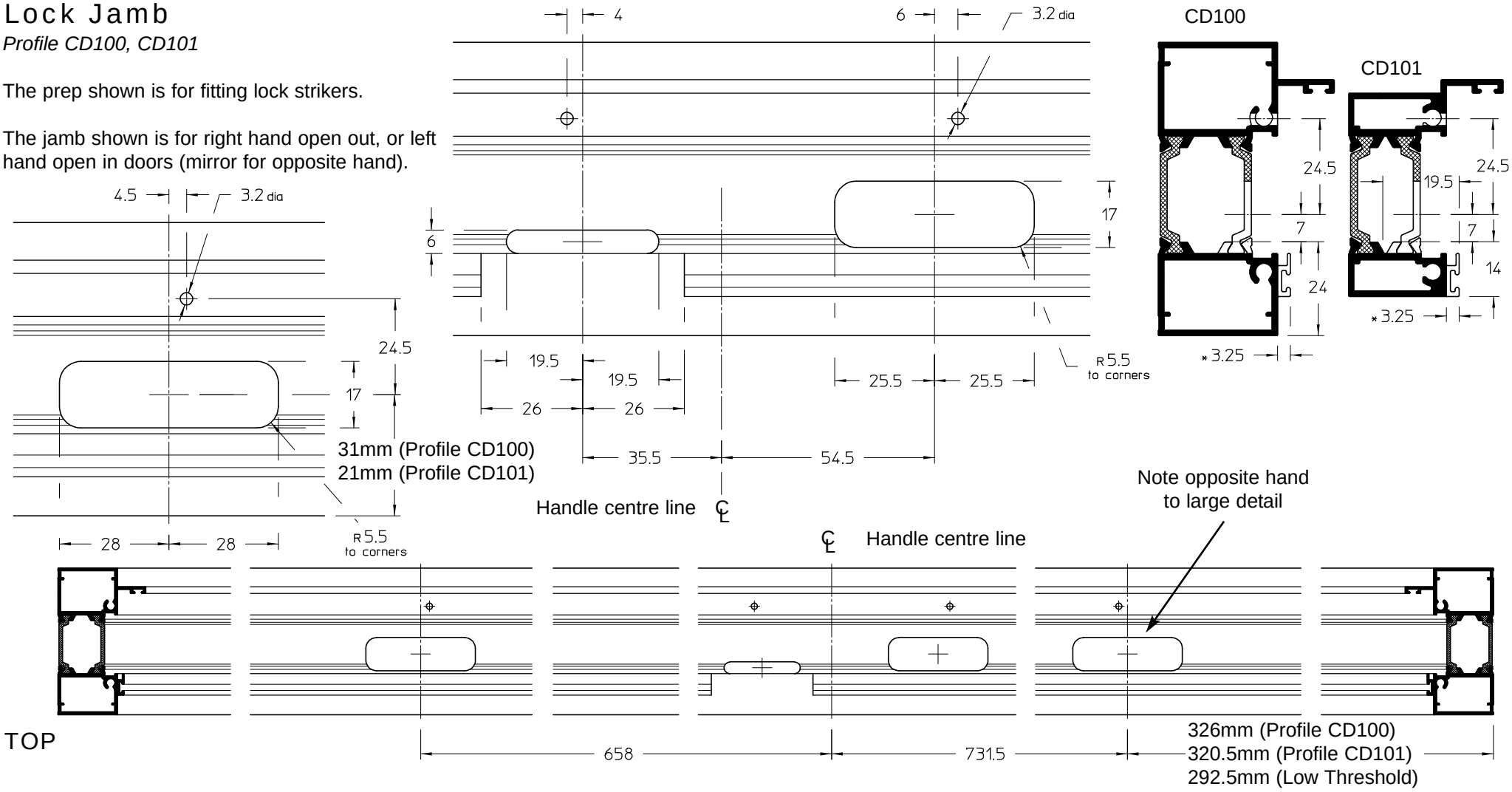
Machining Details - Outerframe

Lock Jamb

Profile CD100, CD101

The prep shown is for fitting lock strikers.

The jamb shown is for right hand open out, or left hand open in doors (mirror for opposite hand).



Machining Details - Outerframe

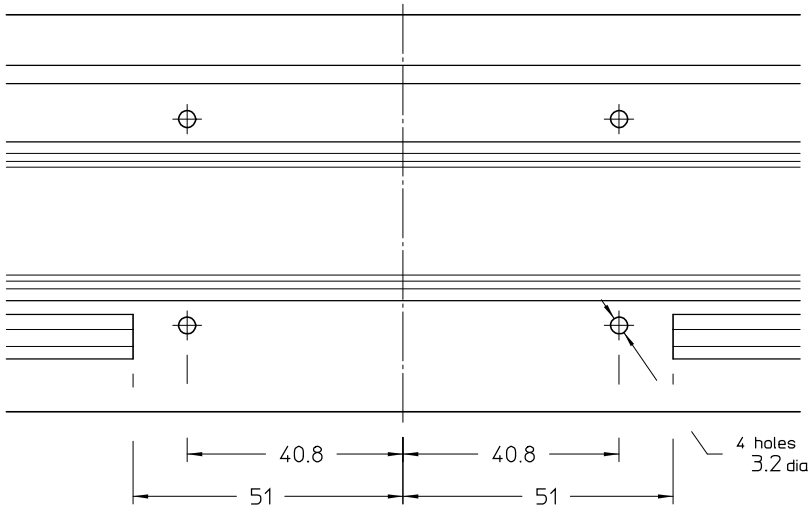
Hang Jamb

Profile CD100, CD101
Drill Jig CDC154

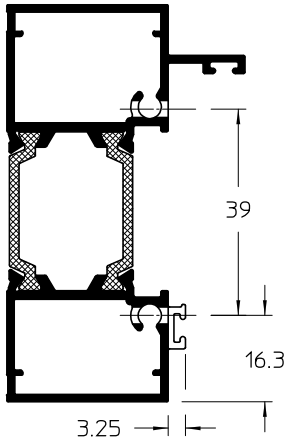
The preparation shown is to allow fitting of the hinges.

The jamb shown is for left hand open out, or right hand open in doors (mirror for opposite hand doors).

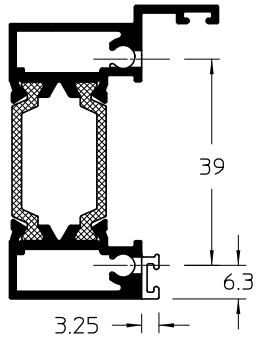
For double doors, prepare one as shown and one opposite hand.



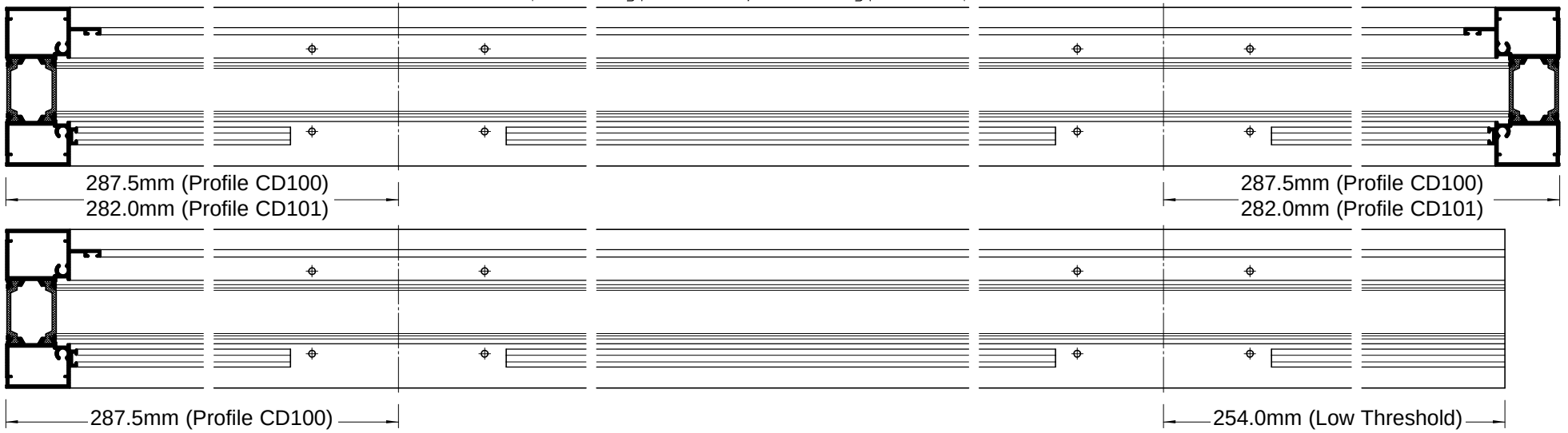
CD100



CD101



TOP



Machining Details - Outerframe

Head, Cill Double Doors (Std)

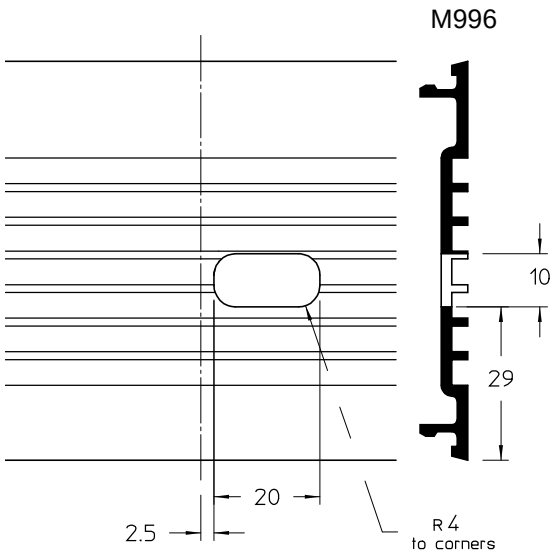
Profile CD100, CD101, M996

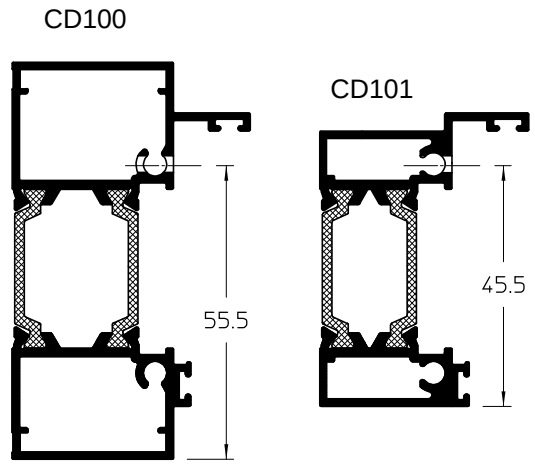
The preparation shown is for flushbolt locking points.

Low threshold doors will have CD100 head profile and M996 cill.

Standard doors will have either CD100 or CD101 head and cills.

Note that low threshold profile M996 is handed, left hand open out or right hand open in shown (mirror for opposite hand doors).

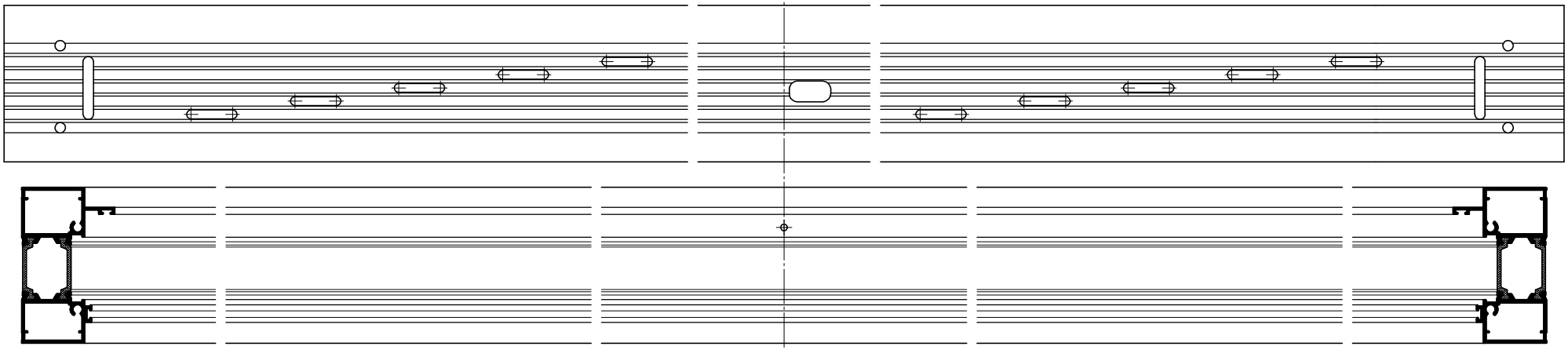




Master Leaf

Centre line of threshold
or centre of unequal split.

Slave Leaf



Machining Details - Outerframe

Head, Cill Double Doors (Optional)

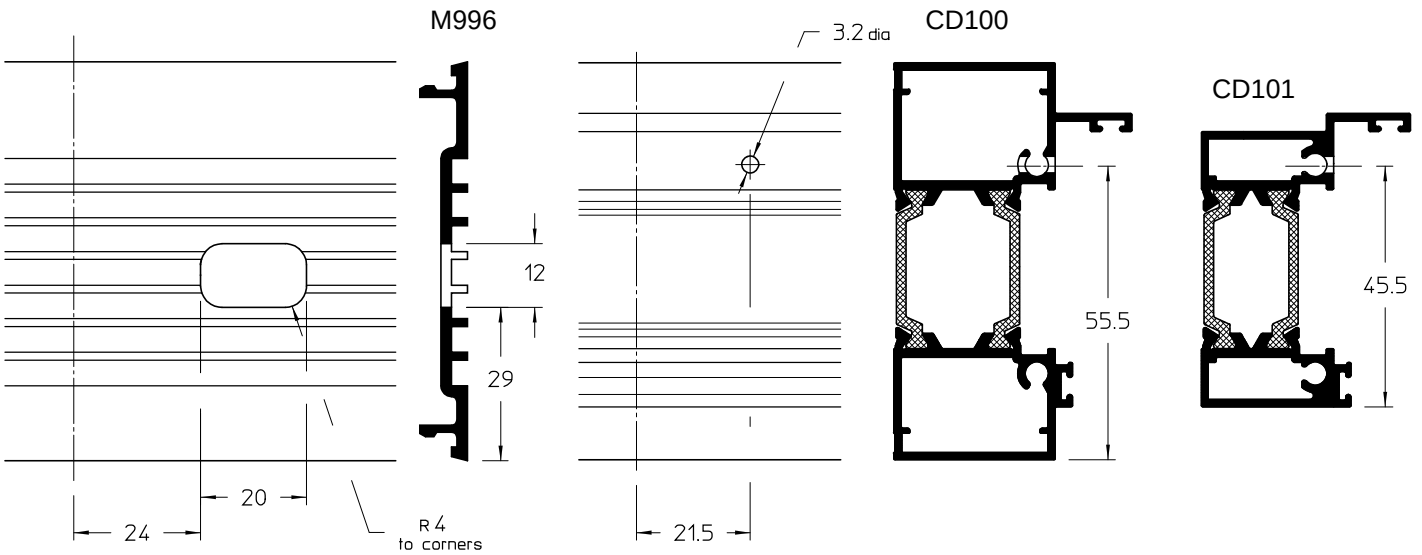
Profile CD100, CD101, M996

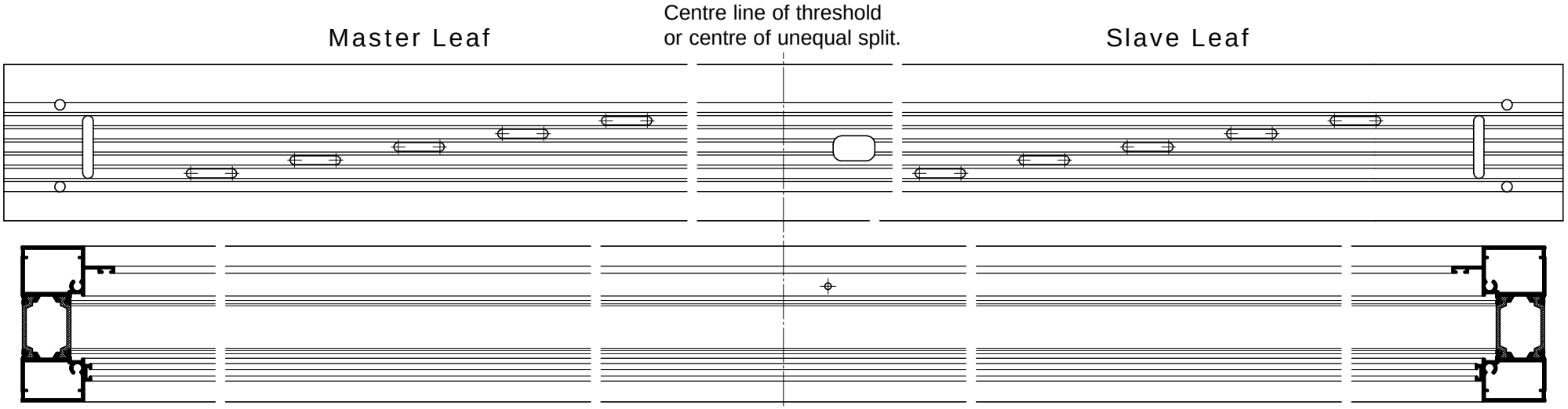
The preparation shown is for optional shootbolt locking points.

Low threshold doors will have CD100 head profile and M996 cill.

Standard doors will have either CD100 or CD101 head and cills.

Note that low threshold profile M996 is handed, left hand open out or right hand open in shown (mirror for opposite hand doors).





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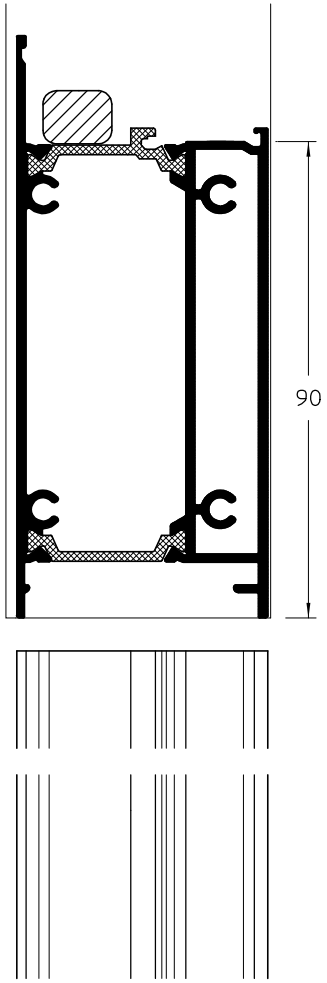
Machining Details - Door Leaf

Bottom Rail Drainage

Profile CD103

The preparation shown is for bottom rail drainage. Prepare all stiles with drainage slots shown below.

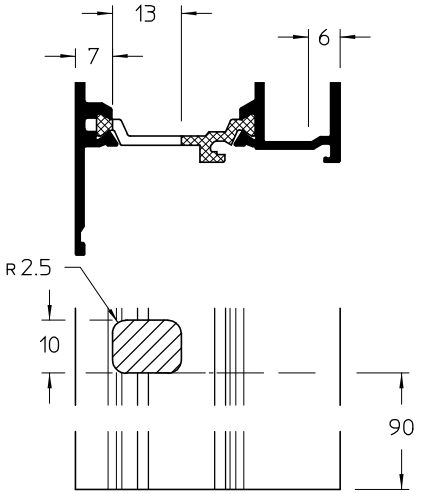
CD103



Stile Drainage Slots

Profile CD102, CD106, CD107

Stile drainage slots are located above bottom rails.



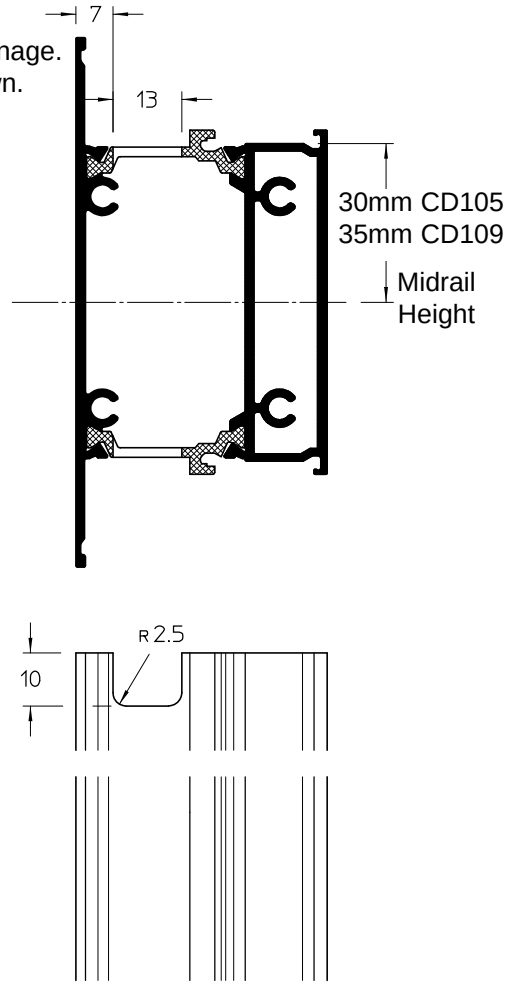
Midrail Drainage

Profile CD105, CD109

The preparation shown is for midrail drainage. Prepare all stiles with drainage slot shown.

Repeat preparation opposite end.

CD105



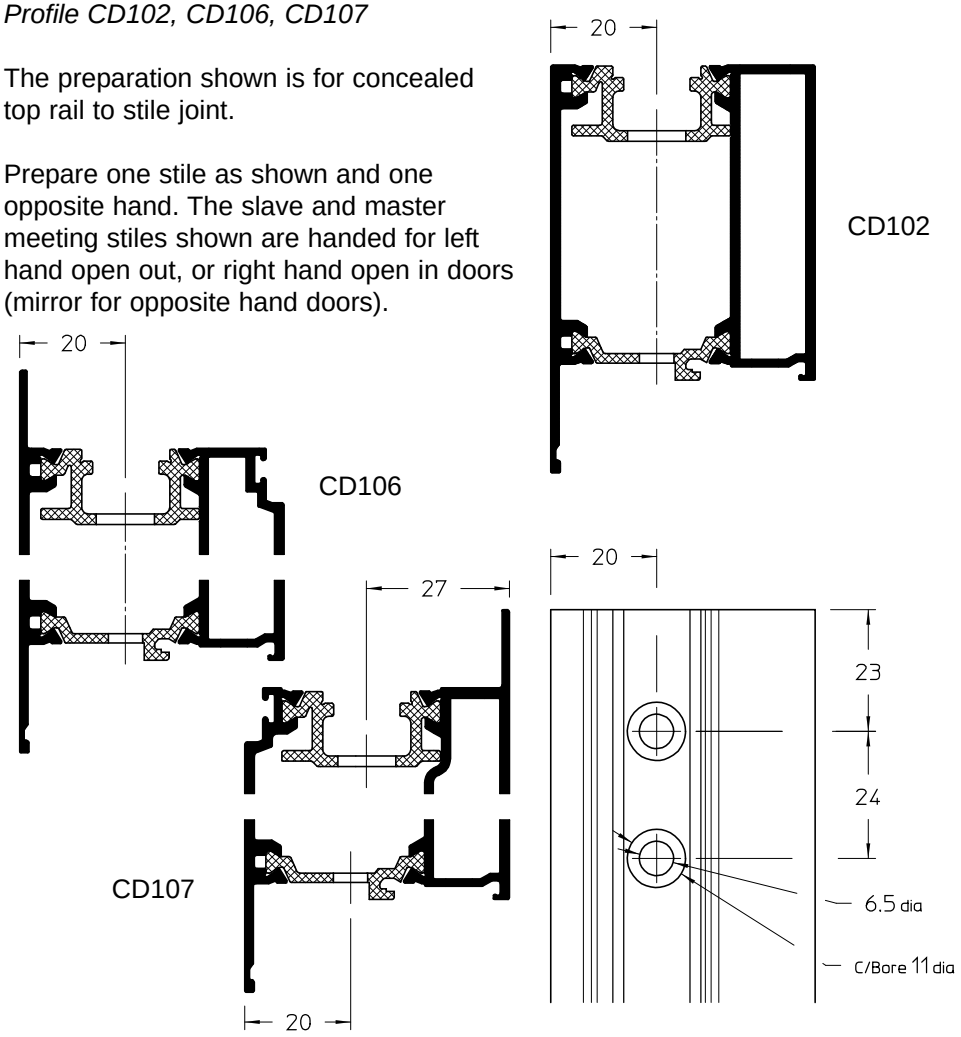
Machining Details - Door Leaf

Concealed Stile Top Rail Fixing (Optional)

Profile CD102, CD106, CD107

The preparation shown is for concealed top rail to stile joint.

Prepare one stile as shown and one opposite hand. The slave and master meeting stiles shown are handed for left hand open out, or right hand open in doors (mirror for opposite hand doors).

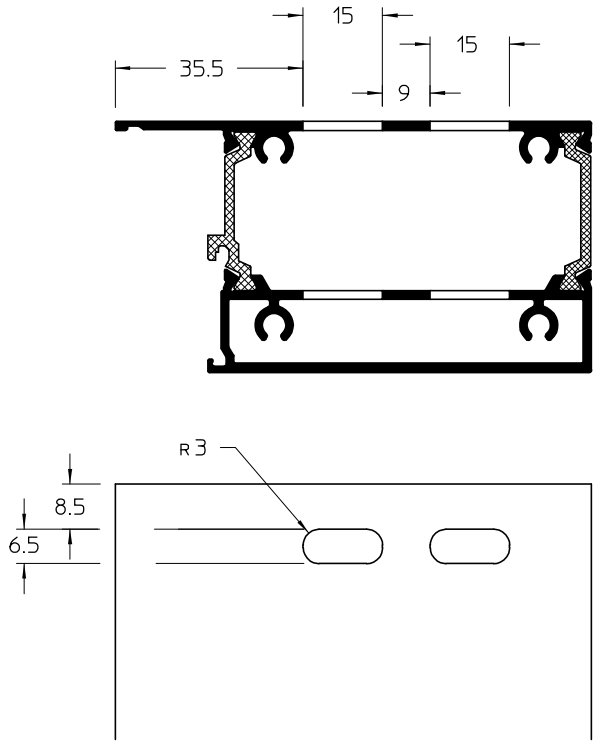


Concealed Top Rail Fixing (Optional)

Profile CD104

The preparation shown is for concealed top rail to stile joint.

This preparation is used with stile preparation alongside, and replaces the standard rail preparation shown on page 4-21



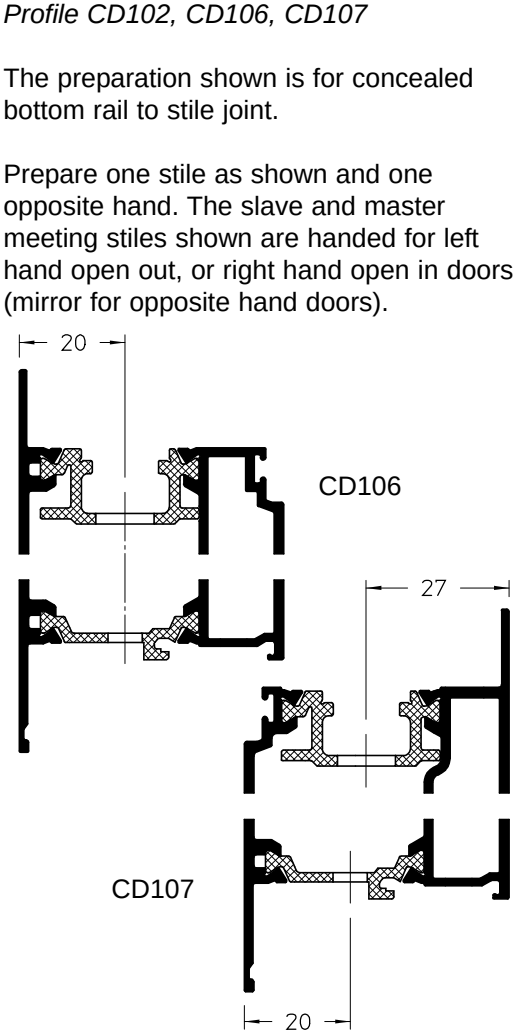
Machining Details - Door Leaf

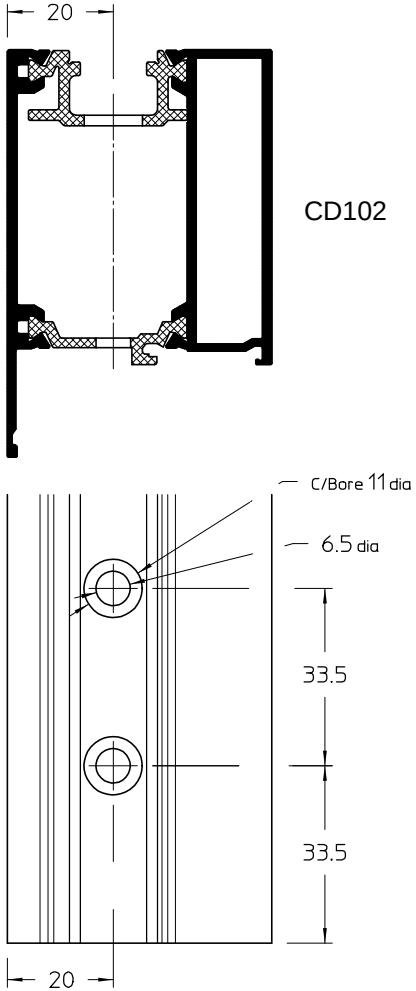
Concealed Stile Bottom Rail Fixing (Optional)

Profile CD102, CD106, CD107

The preparation shown is for concealed bottom rail to stile joint.

Prepare one stile as shown and one opposite hand. The slave and master meeting stiles shown are handed for left hand open out, or right hand open in doors (mirror for opposite hand doors).



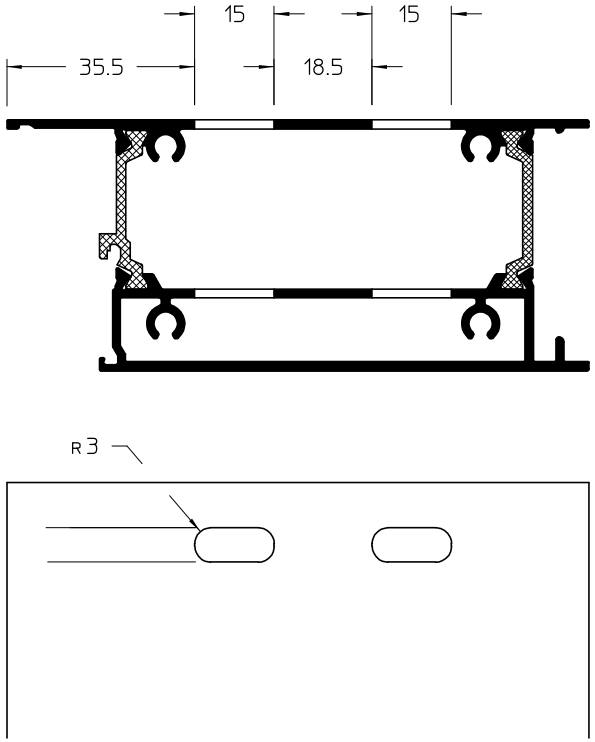


Concealed Bottom Rail Fixing (Optional)

Profile CD104

The preparation shown is for concealed top rail to stile joint.

This preparation is used with stile preparation alongside, and replaces the standard rail preparation shown on page 4-21

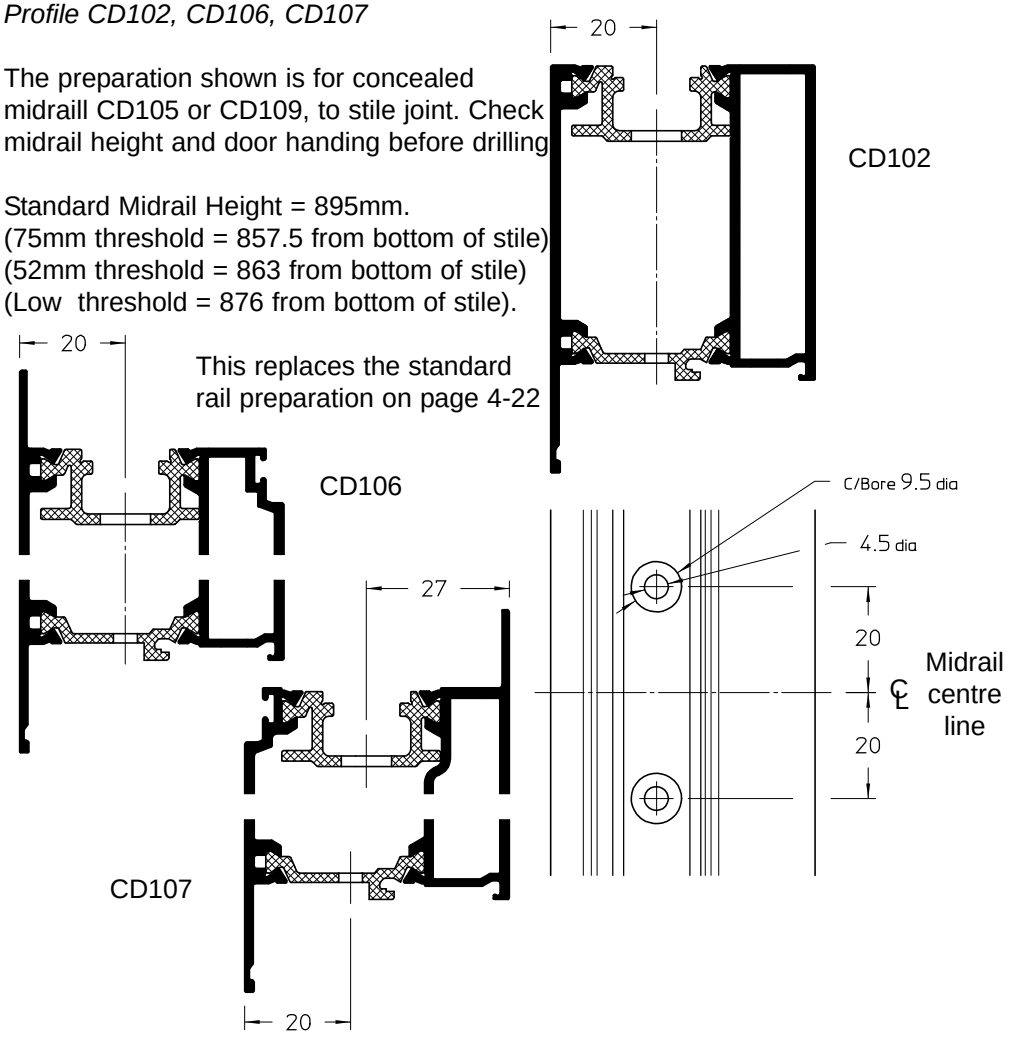


Concealed Stile Midrail Fixing (Optional)

Profile CD102, CD106, CD107

The preparation shown is for concealed midraill CD105 or CD109, to stile joint. Check midrail height and door handing before drilling

Standard Midrail Height = 895mm.
(75mm threshold = 857.5 from bottom of stile)
(52mm threshold = 863 from bottom of stile)
(Low threshold = 876 from bottom of stile).



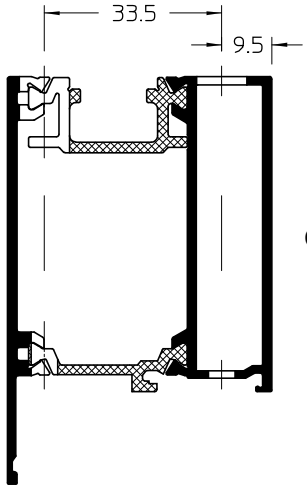
Machining Details - Door Leaf

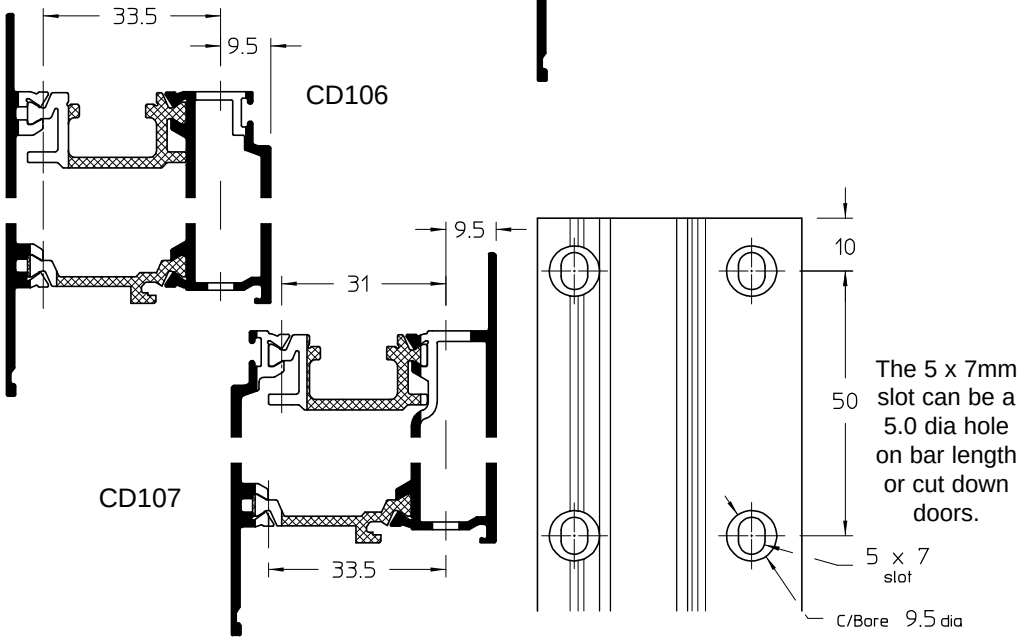
Stile Top Rail Fixing (Std)

Profile CD102, CD106, CD107
Drill Jig CDC159, CDC160, CDC161

The preparation shown is for the top rail to stile joint.

Prepare one stile as shown and one opposite hand.
The slave and master meeting stiles shown are handed for left hand open out, or right hand open in doors (mirror for opposite hand doors).





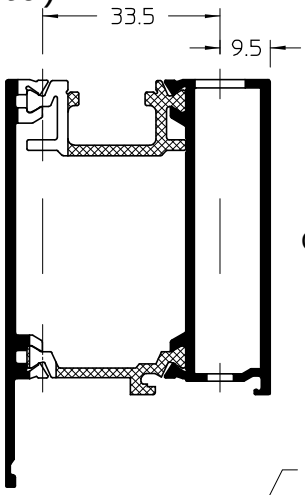
Stile Bottom Rail Fixing (Std)

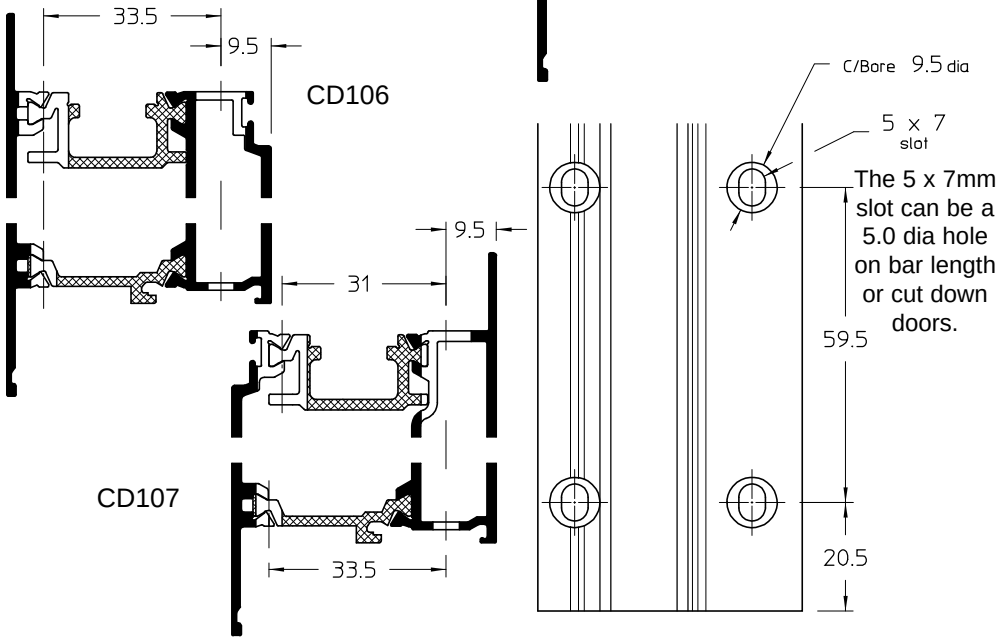
Profile CD102, CD106, CD107

The preparation shown is for the bottom rail to stile joint.

Prepare one stile as shown and one opposite hand.

The slave and master meeting stiles shown are handed for left hand open out, or right hand open in doors (mirror for opposite hand doors).





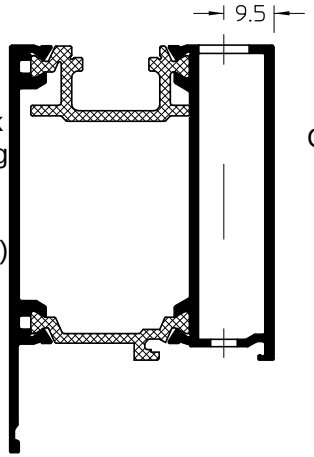
Machining Details - Door Leaf

Stile Midrail Fixing (Std)

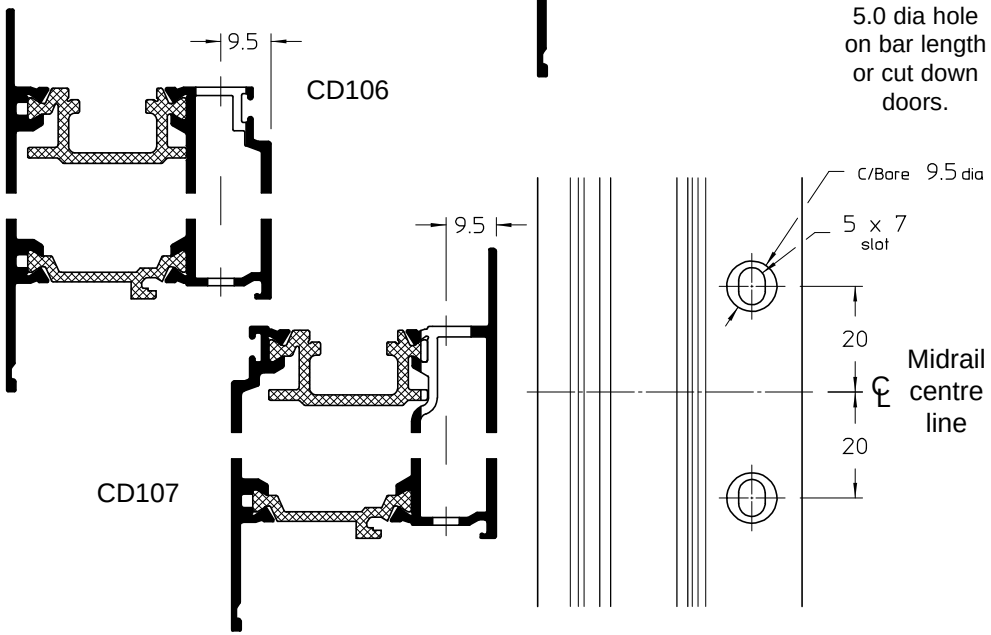
Profile CD102, CD106, CD107
Drill Jig CDC162

The preparation shown is for the midraill CD105 or CD109, to stile joint. Check midrail height and door handing before drilling

Standard Midrail Height = 895mm.
(75mm threshold = 857.5 from bottom of stile)
(52mm threshold = 863 from bottom of stile)
(Low threshold = 876 from bottom of stile).



The 5 x 7mm slot can be a 5.0 dia hole on bar length or cut down doors.

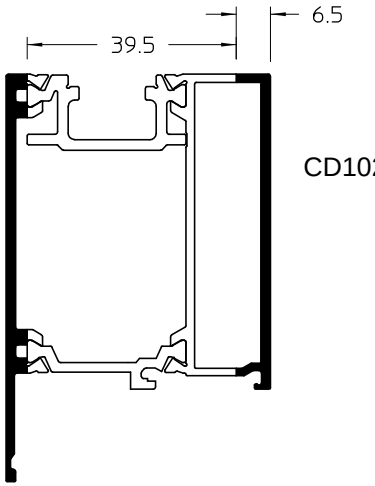


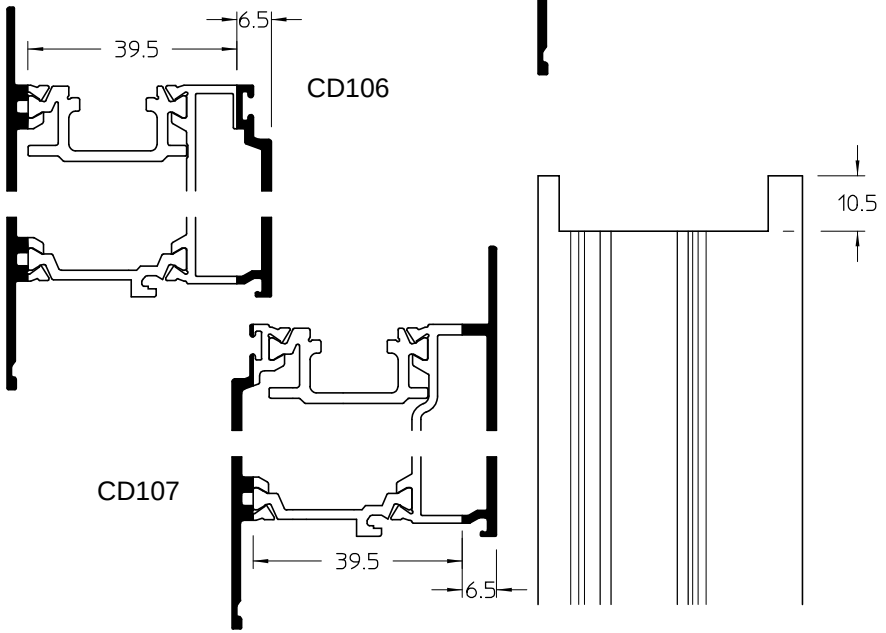
Stile Low Threshold Seal Carrier Preparation

Profile CD102, CD106, CD107

The preparation shown is to allow the seal carrier to run full width of the door.

Only prepare at the bottom of stiles.



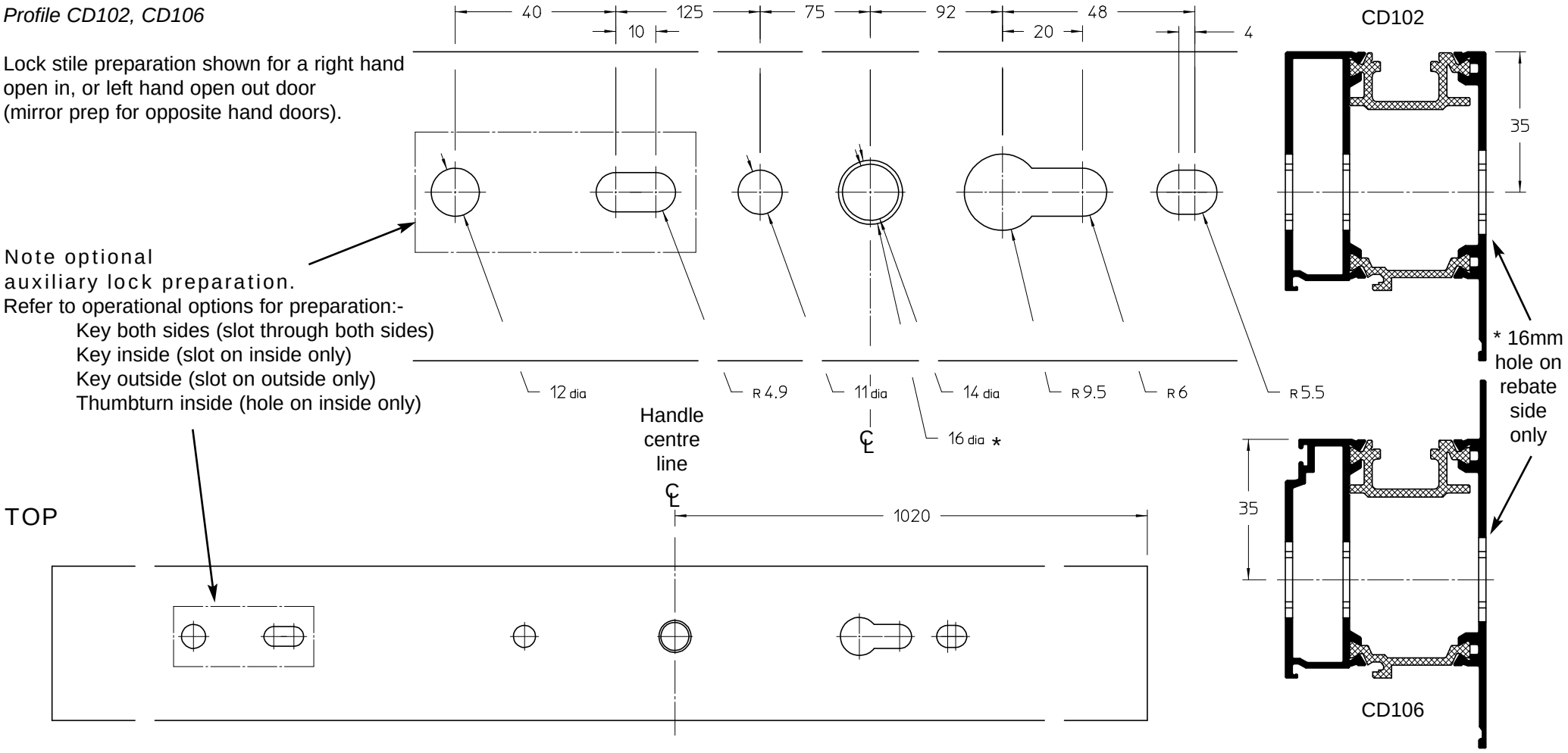


Machining Details - Door Leaf

Lock Stile

Profile CD102, CD106

Lock stile preparation shown for a right hand open in, or left hand open out door (mirror prep for opposite hand doors).



Note optional auxiliary lock preparation.
Refer to operational options for preparation:-

- Key both sides (slot through both sides)
- Key inside (slot on inside only)
- Key outside (slot on outside only)
- Thumbturn inside (hole on inside only)

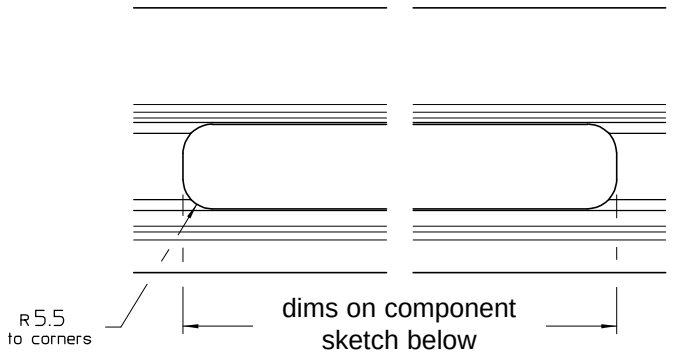
Machining Details - Door Leaf

Lock Stile - Continued

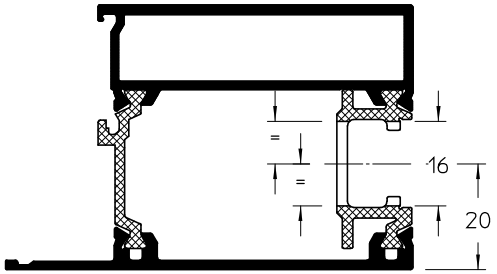
Profile CD102, CD106

Lock stile preparation shown for a right hand open in, or left hand open out door (mirror prep for opposite hand doors).

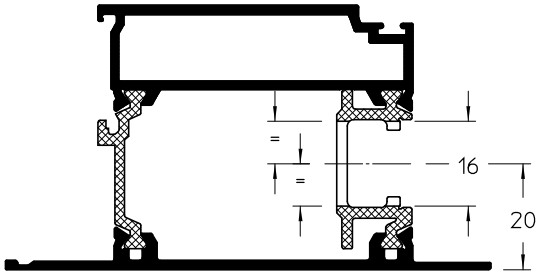
* Note optional auxiliary lock preparation.



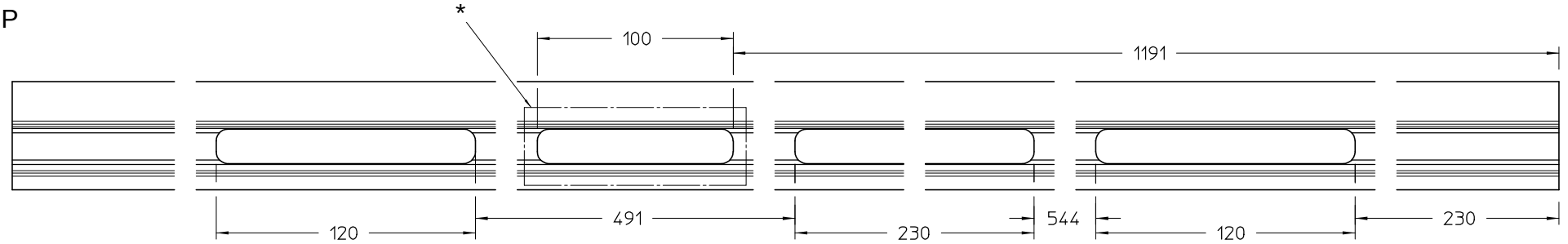
CD102



CD106



TOP



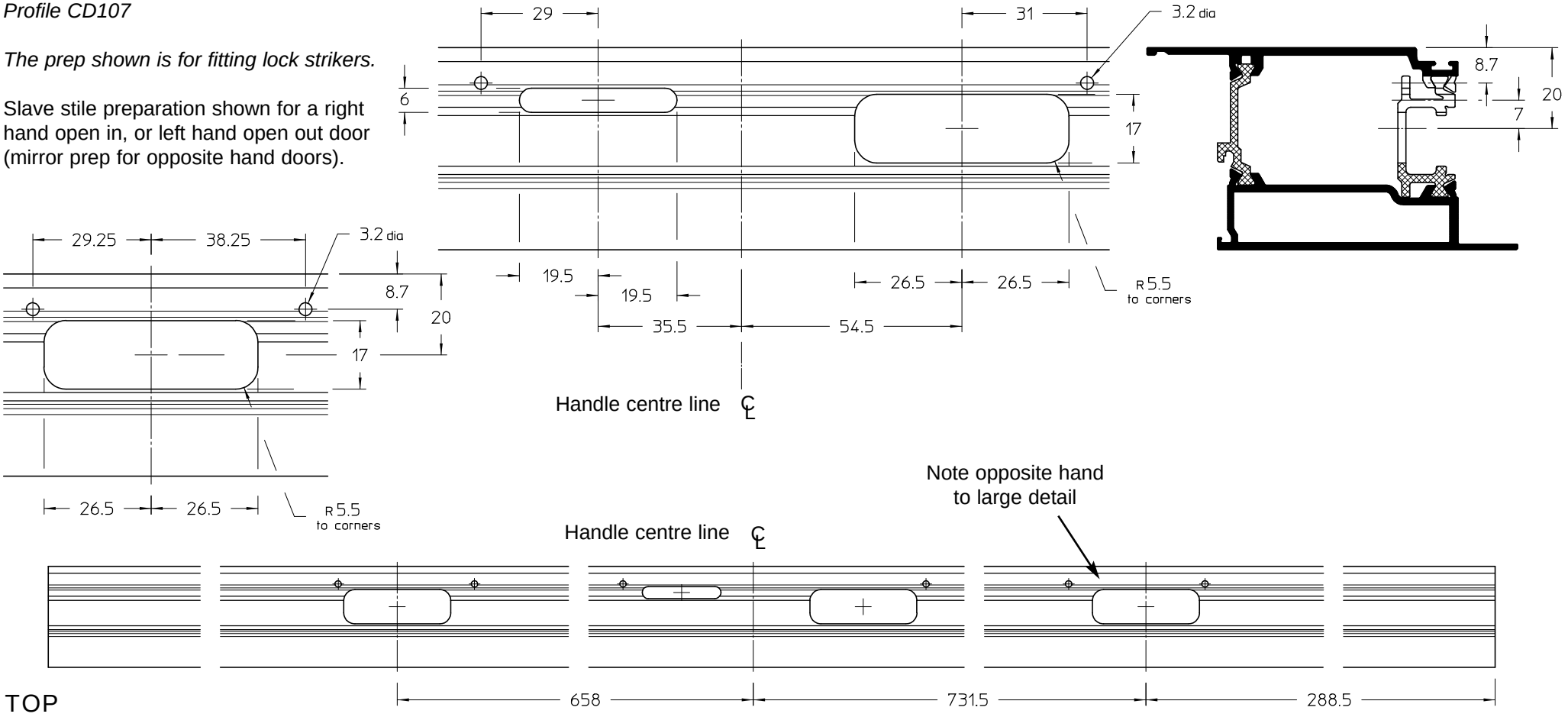
Machining Details - Door Leaf

Slave Stile

Profile CD107

The prep shown is for fitting lock strikers.

Slave stile preparation shown for a right hand open in, or left hand open out door (mirror prep for opposite hand doors).

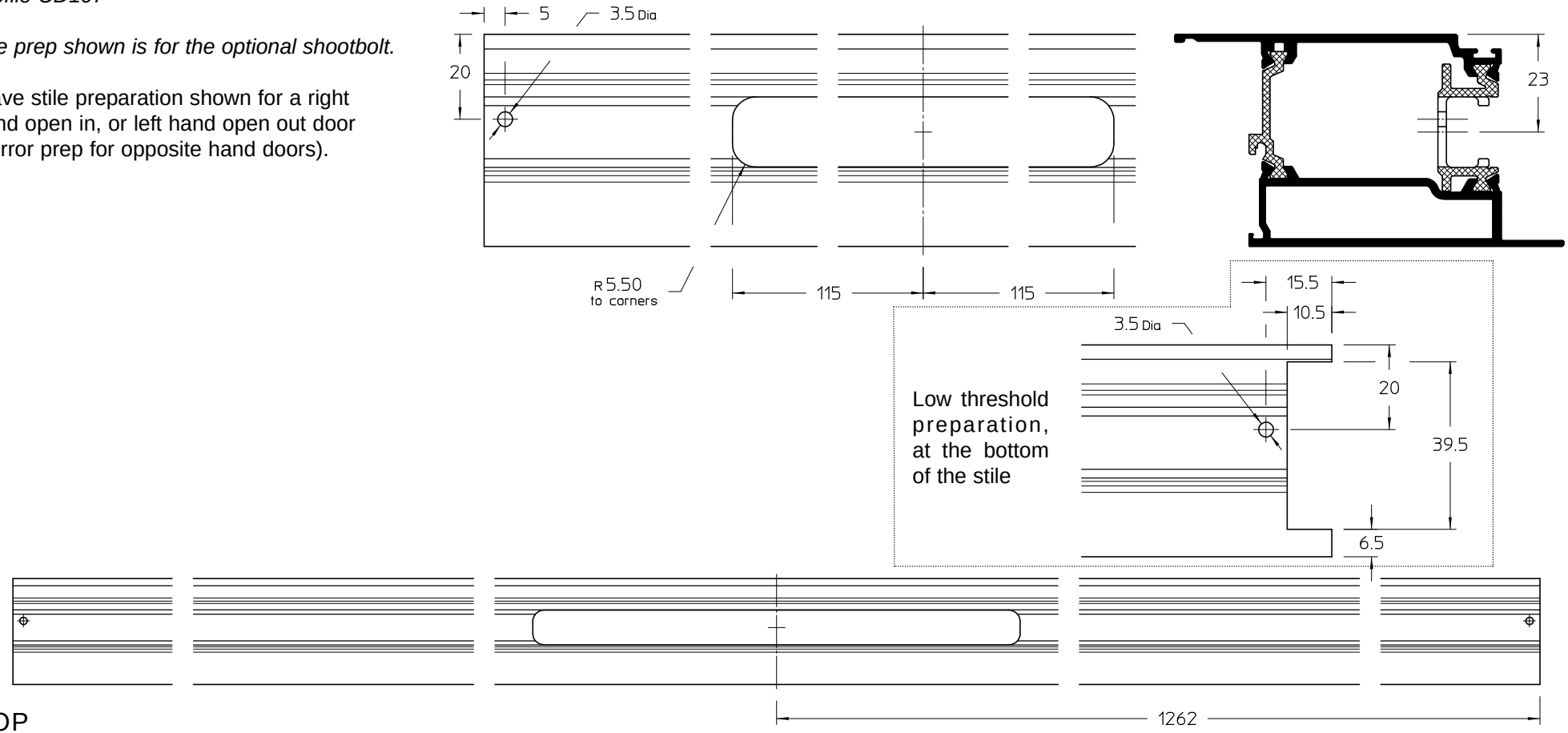


Slave Stile Shootbolt (Optional)

Profile CD107

The prep shown is for the optional shootbolt.

Slave stile preparation shown for a right hand open in, or left hand open out door (mirror prep for opposite hand doors).



TOP

Machining Details - Door Leaf

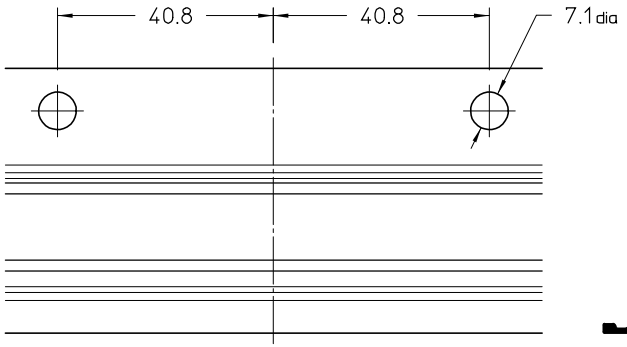
Hang Stile

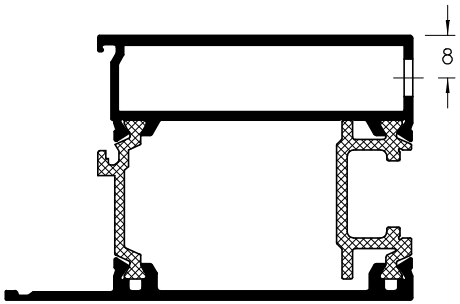
Profile CD102
Drill Jig CDC153

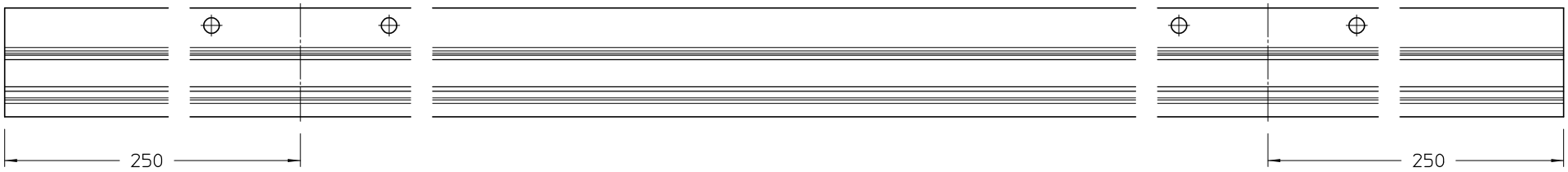
The preparation shown is to allow fitting of the hinges.

This component is non handed.

NOTE:-
Fit four M5 nutserts (NM5ZN) after drilling.





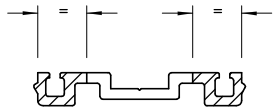


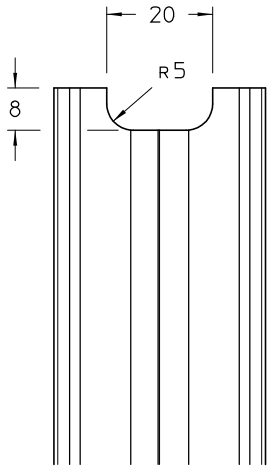
Low Threshold Seal Carrier Flushbolt (CDC136) Prep

Profile CD076

On low threshold double doors, the low threshold seal carrier will need a clearance slot for the flushbolt.

This preparation is only required in the slave leaf seal carrier and only at one end.



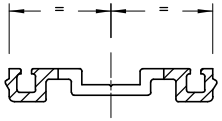


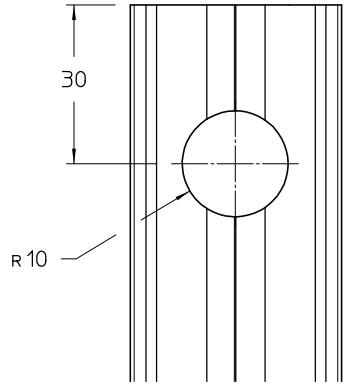
Low Threshold Seal Carrier Shootbolt (DFC1668/CDP252/CDP253) Prep

Profile CD076

On low threshold double doors, the low threshold seal carrier will need a clearance slot for the shootbolt.

This preparation is only required in the slave leaf seal carrier and only at one end.





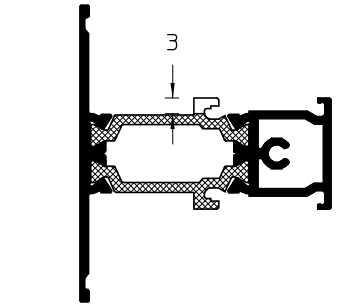
Machining Details - Door Leaf

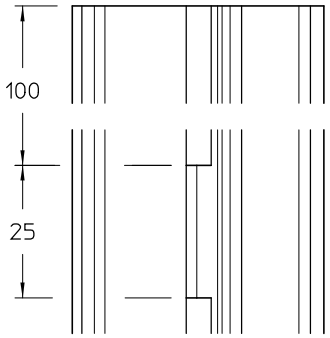
Laybar Drainage

Profile CD108

The preparation shown is for drainage in horizontal laybars.

Repeat preparation opposite end.



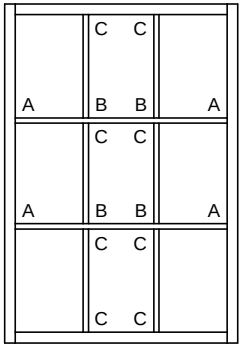


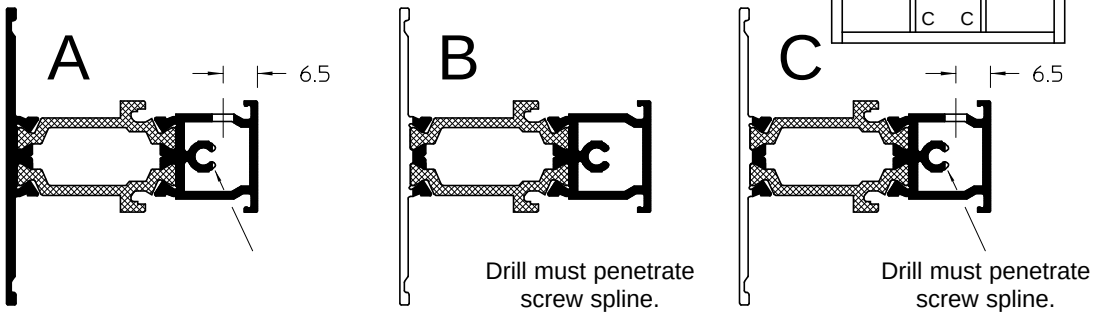
Vertical Laybar End Preparations.

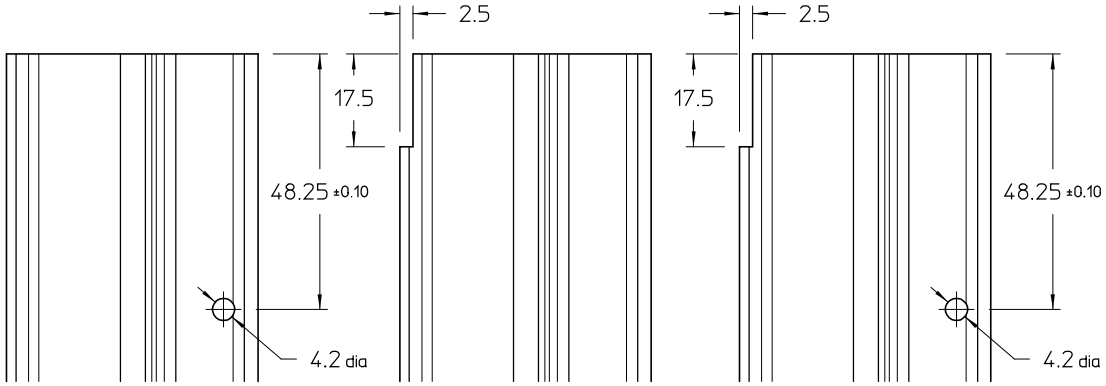
Profile CD108
Drill Jig CWC091

Horizontal laybars are to run continuous, with vertical laybars being intermittent.

Laybar end preparations come in there variants, refer to the diagram alongside for laybar end prep references. Further clarification can be found in the assembly section.







Machining Details - Door Leaf

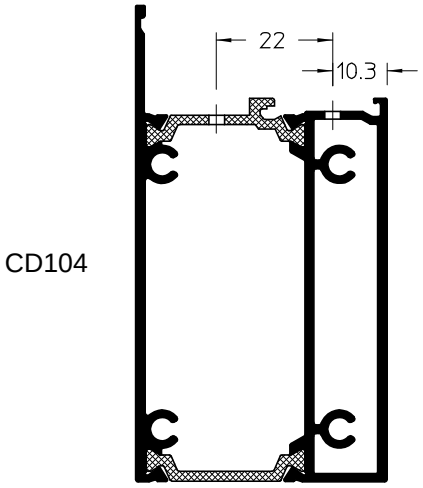
Rail Laybar Fixing

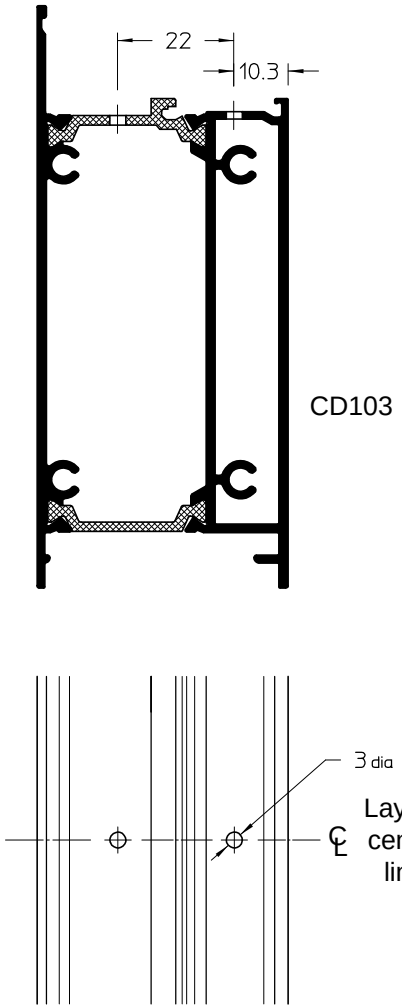
Profile CD103, CD104
Drill Jig CDC155

The preparation shown is for laybar to rail joint. Vertical laybars are positioned to give equal glass sizes.

Calculations for laybar centres from end of rail:-

Please see diagram on next page.



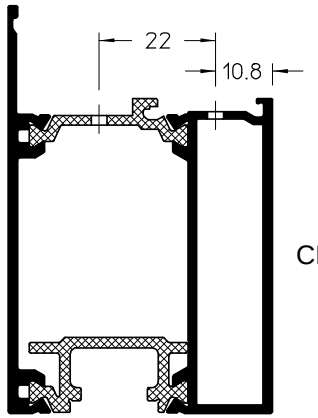


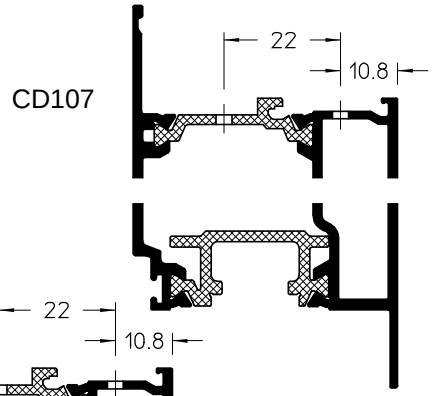
Stile Laybar Fixing

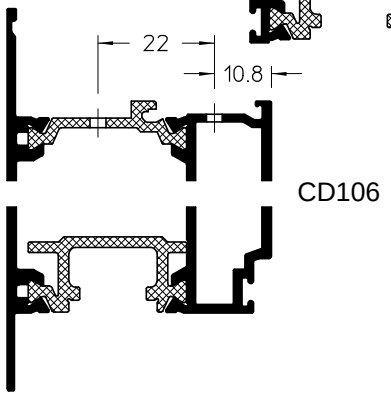
Profile CD102, CD106, CD107
Drill Jig CDC155

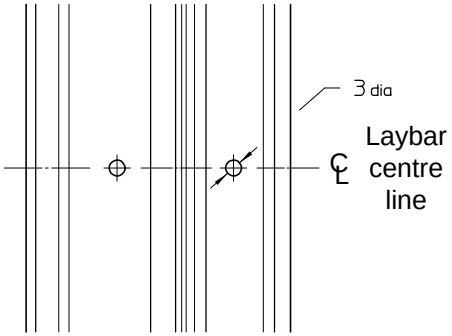
The preparation shown is for laybar to stile joint. Horizontal laybars are positioned to give equal glass sizes.

Calculations for laybar centres from bottom of stile:- Vertical laybar size plus 120.5mm, and then laybar size plus 21mm for every additional laybar.









Machining Details - Door Leaf

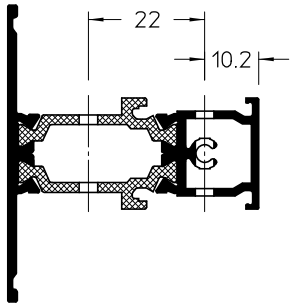
Laybar Cruciform Joint *Profile CD108*

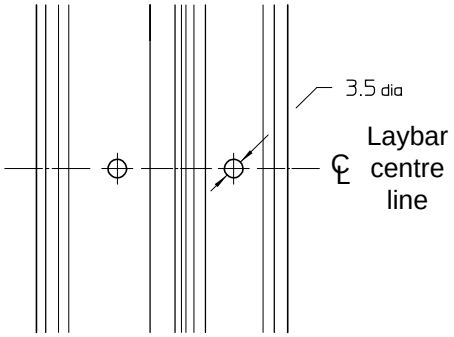
Drill Jig CWC090

The preparation shown is for the cruciform joint in horizontal laybars. Vertical laybars are positioned to give equal glass sizes.

Calculations for laybar centres from end of laybar:-

Please see diagram alongside.



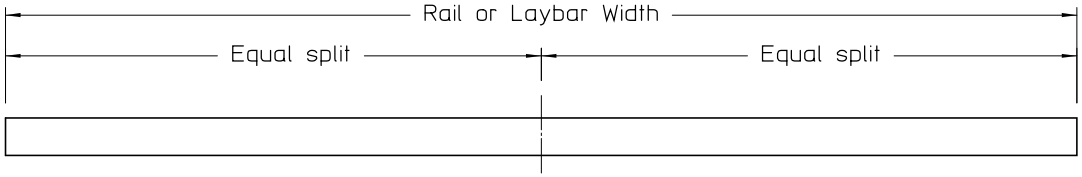


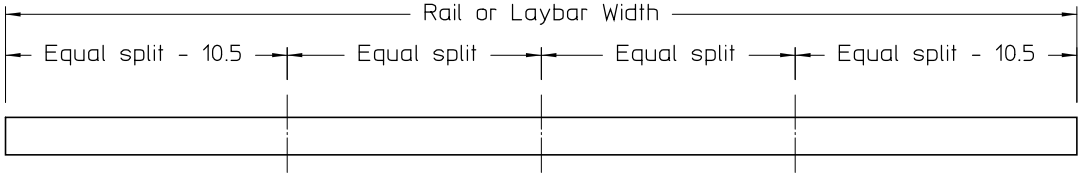
Vertical Laybar Position Calculations

The diagram below shows the calculations needed for positioning the vertical laybars onto the rails and horizontal laybars. Vertical laybars are positioned to give equal glass sizes.

When only one vertical laybar is to be fitted, the calculation is:-
Rail/Laybar width divide by 2

When more than one vertical laybar is to be fitted, then the calculation is:-
Rail/Laybar width plus 21mm then divide by number of panes.
Notice that the extreme outer laybar positions are equal split minus 10.5mm.



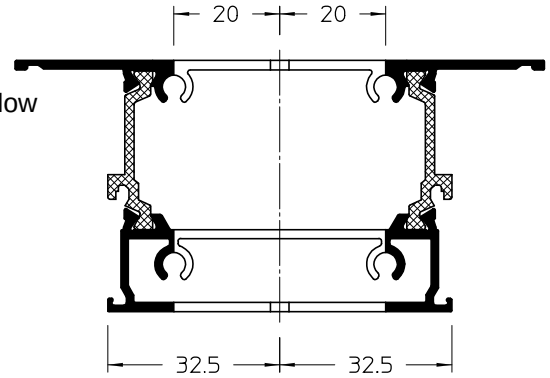


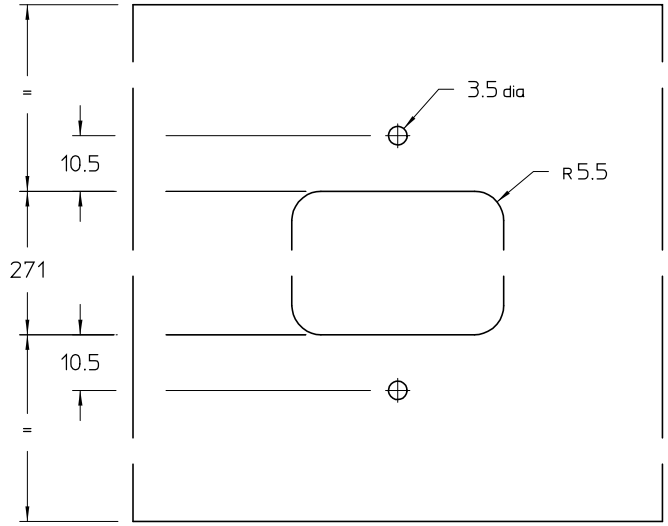
Machining Details - Door Leaf

Midrail Letter plate

Profile CD105

The preparation shown is to allow fitting of CDP144 letter plate.





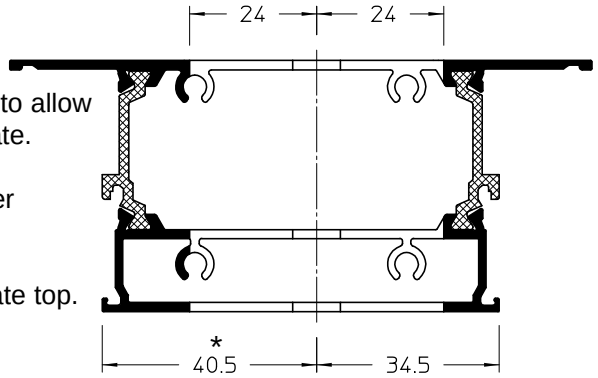
Midrail Letter plate

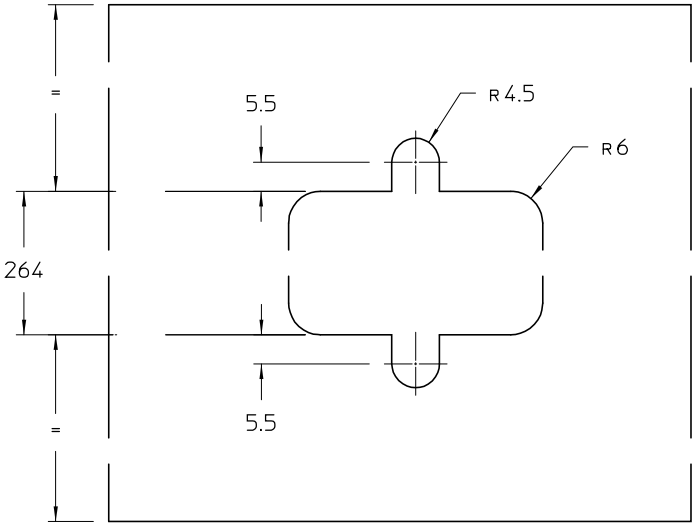
Profile CD109

The preparation shown is to allow fitting of DFP630 letter plate.

Note offset is to allow letter plate to sit centrally.

* 40.5 mm dim is letter plate top.



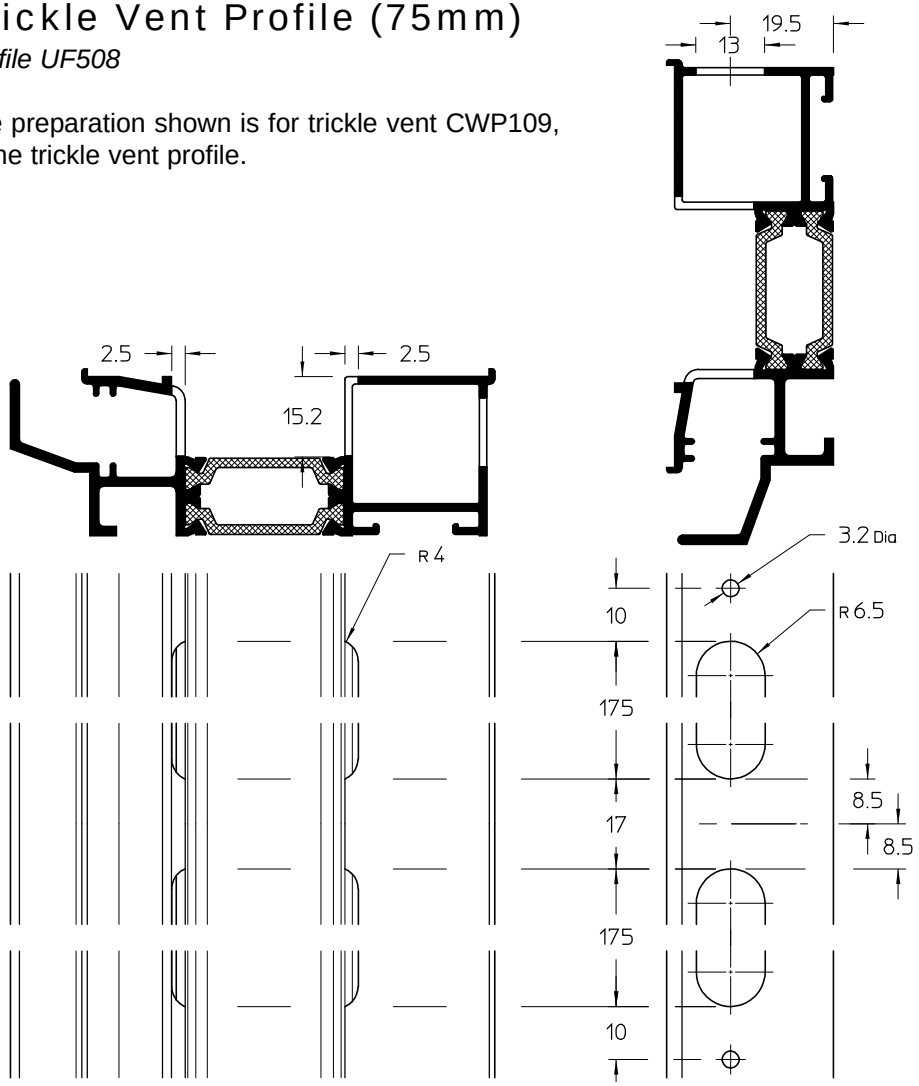


Machining Details - Trickle Vent

Trickle Vent Profile (75mm)

Profile UF508

The preparation shown is for trickle vent CWP109, in the trickle vent profile.

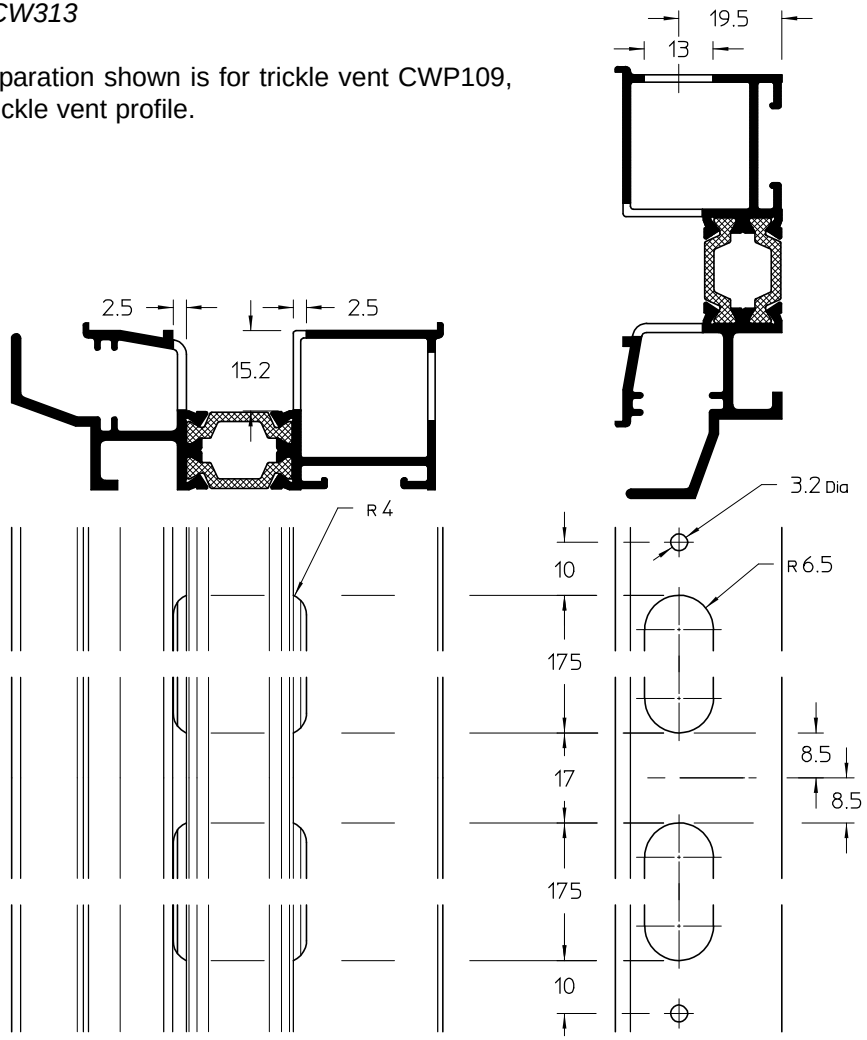


Centre line of trickle vent

Trickle Vent Profile (52mm)

Profile CW313

The preparation shown is for trickle vent CWP109, in the trickle vent profile.



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Outerframe Corner Joint Assembly

Profile CD100, CD101

Before assembly, note parts list for frame being assembled.

Seals CDC147, DFC1208 & DFC1450 must be fitted in the outerframe prior to corner jointing.

DFC1450 & DFC1208 is fitted in the head.
CDC147 & DFC1208 is fitted in the jambs.
DFC1208 is fitted in the cill.

DFC1208 can be replaced with DFC1103, and this alternative seal can also be fitted after frame assembly.

Coat mitred ends of the outerframe using:-
Henkel Terostat 934 (clear)
Henkel Terostat 939 (Grey, Black or White)

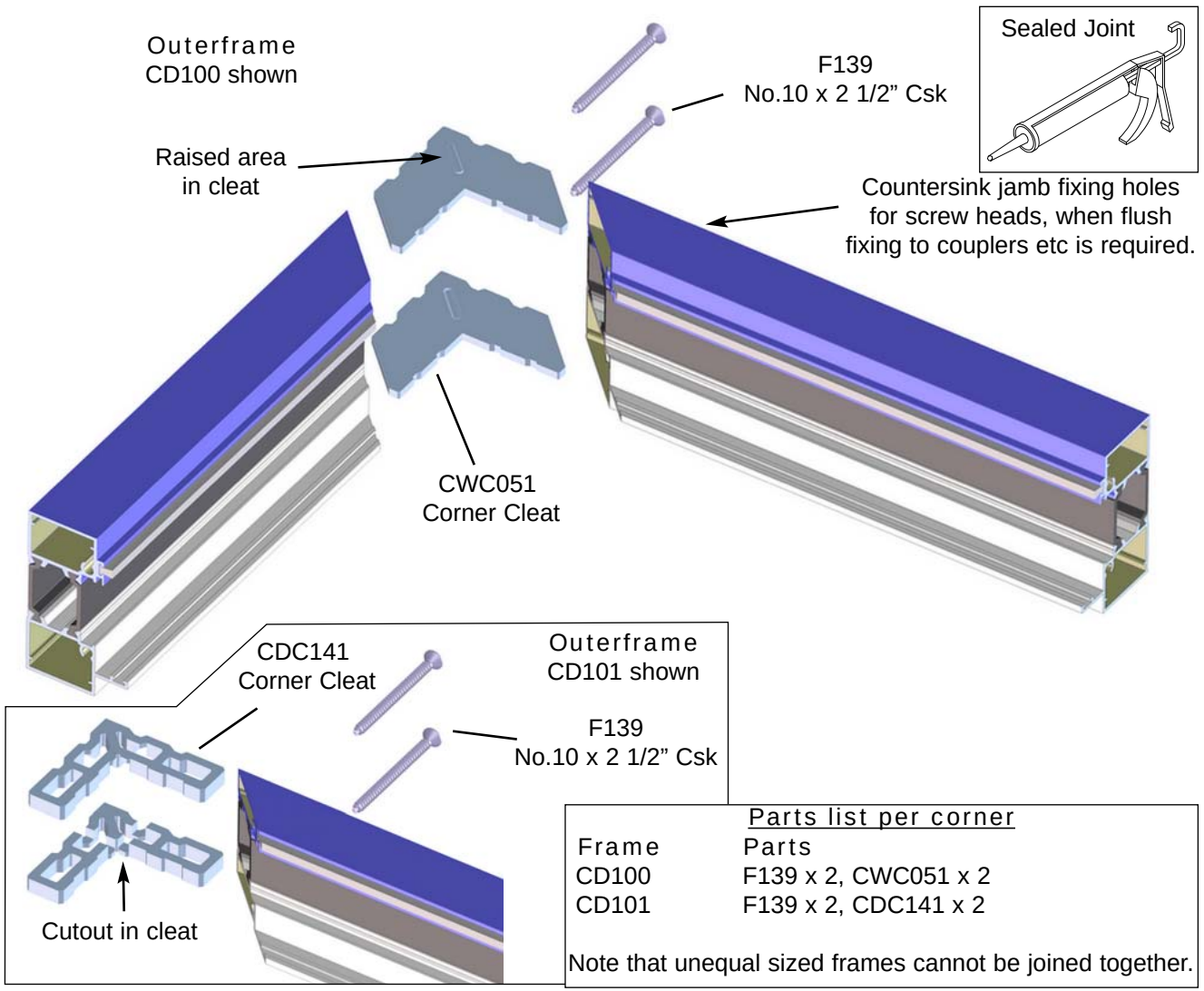
Insert the cleats into the outerframe, ensuring that all cleats are correctly located.

On CD100 frames:- The raised area in the cleats must be facing outwards, towards the outer faces of the profile.

On CD101 frames:- The cutout in the cleats must be facing inwards, away from the outer faces of the profile.

Assemble the frame, ensuring that all joints are fully closed and effectively filled with sealant.

Clean off any excess sealant from the visible surfaces immediately using :- Terosan FL Cleaner



Parts list per corner

Frame	Parts
CD100	F139 x 2, CWC051 x 2
CD101	F139 x 2, CDC141 x 2

Note that unequal sized frames cannot be joined together.

Assembly - Outerframe

Low Threshold Corner Joint

Profile CD100

Before assembly, note parts list for frame being assembled.

Seals CDC147, DFC1208 & DFC1450 must be fitted in the outerframe prior to corner jointing.

DFC1450 & DFC1208 is fitted in the head.
CDC147 & DFC1208 is fitted in the jambs.

DFC1208 can be replaced with DFC1103, and this alternative seal can also be fitted after frame assembly.

Coat all mating faces that will come into contact with the outerframe using Henkel Terostat 934 or 939.

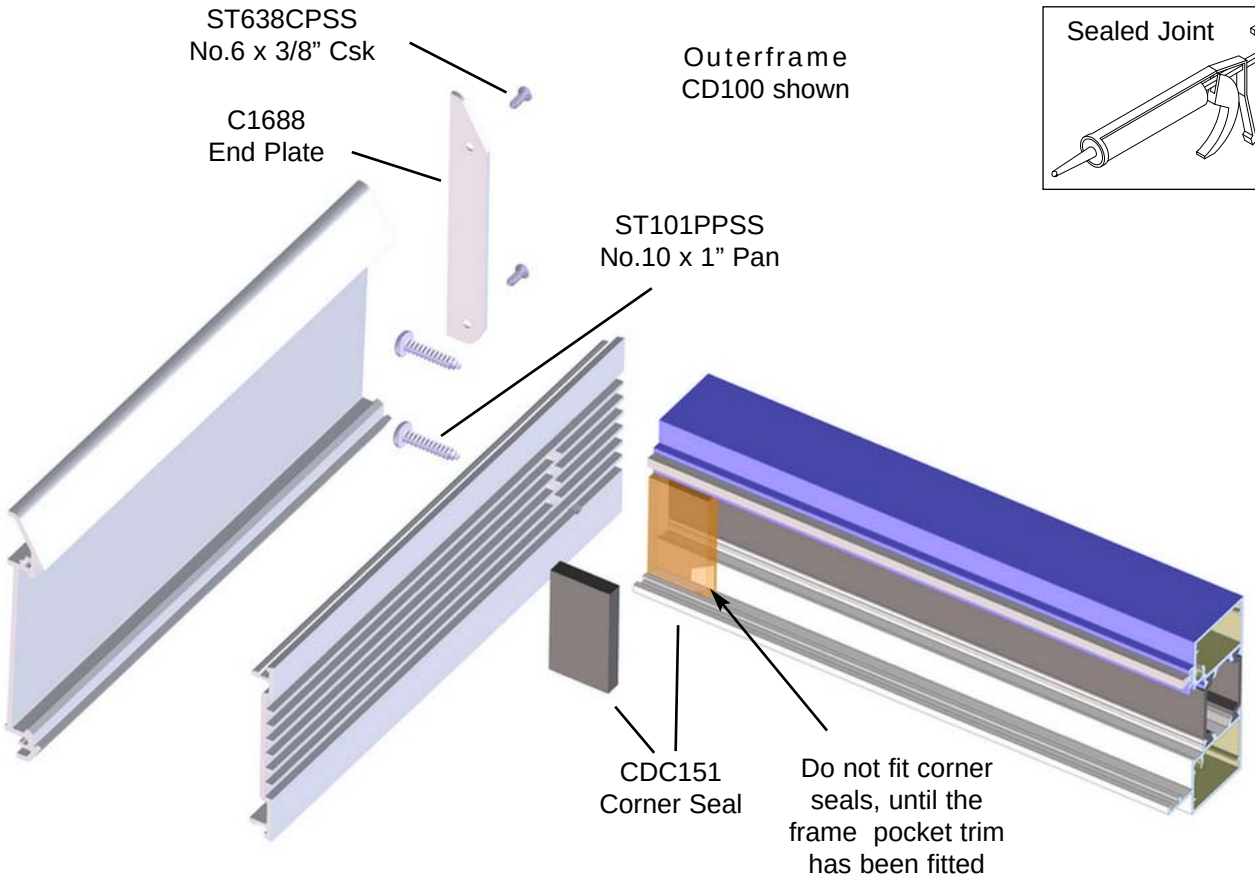
Secure the threshold to the jamb with No.10 self tap screws.

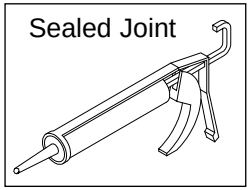
Check orientation (drainage slots to the outside) and clip the threshold base onto the threshold. Keeping the ends flush between the threshold base and the threshold.

Fill any voids between the jamb and transom, then seal and screw the end plate to the threshold base using No.6 self tap screws. It is vitally important that all voids are sealed along with the end cap, to stop water ingress at the ends of the threshold.

Clean off any excess sealant from the visible surfaces immediately using :- Terosan FL Cleaner

Peal the backing strip from the corner seal and apply to position shown, after pocket infill trim CD075 has been fitted.





Parts list per joint

Frame	Parts
CD100	C1688 x 1, CDC147 x 1, ST638CPSS x 2, ST101PPSS x 2
CD101	N/A

Assembly - Door Leaf

Concealed Leaf Rail/Stile Joint (Optional)

Profile CD103, CD104

Before assembly, note parts list for frame being assembled.

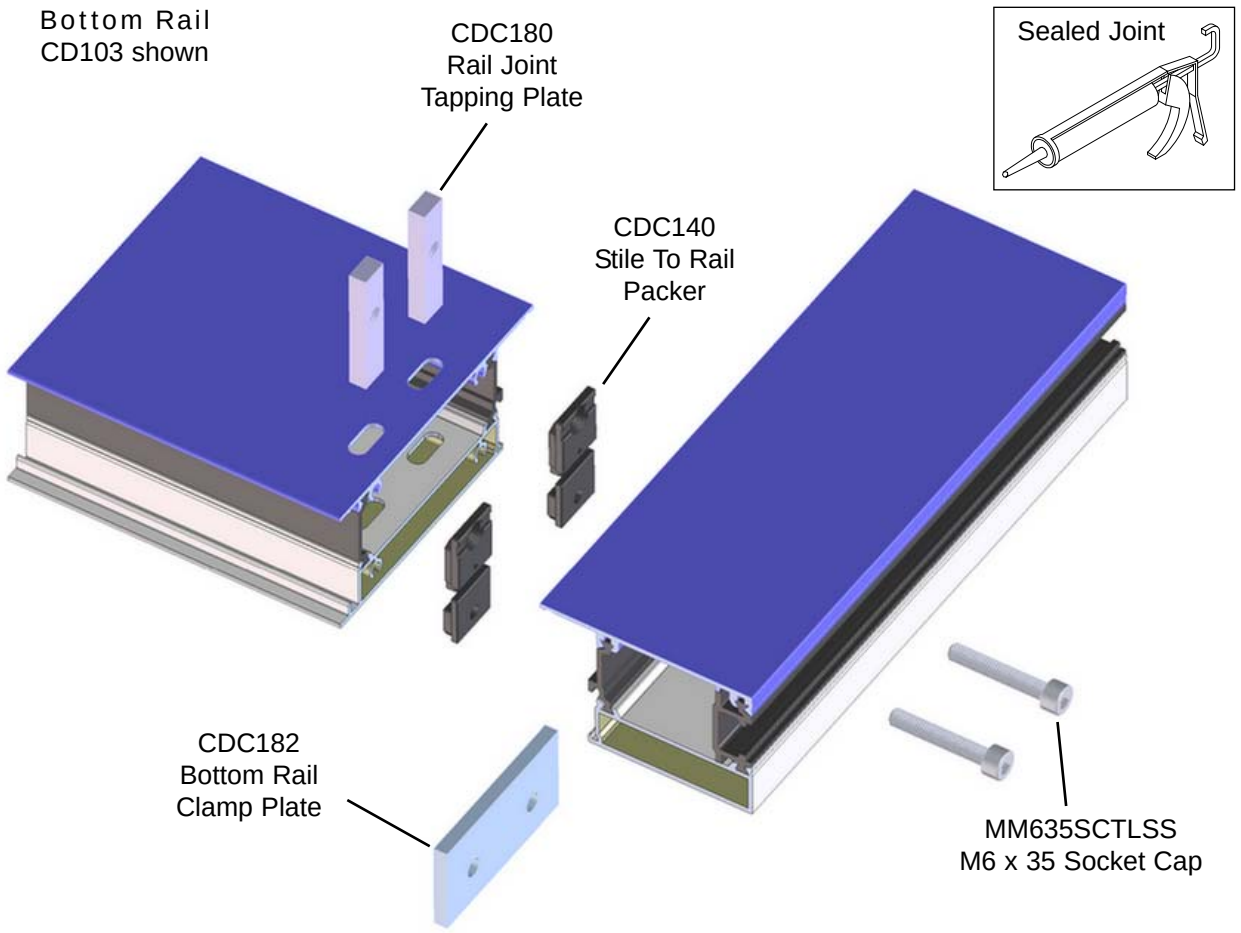
It must be noted that door leaves are assembled around laybars if fitted. Follow laybar construction on pages (5-6 & 5-7), before door leaf construction.

Coat all (major) mating faces that will come into contact with the door leaf using Henkel Terostat 934 or 939, taking care not to block any drainage paths.

Assemble as shown, using tapping plates, rail to stile packers, rail clamp plate and M6 machine screws.

Check that the rail is flush with the end of the stile before final tightening, then clean off any excess sealant from the visible surfaces immediately using :-

Terosan FL Cleaner



Parts list per joint

Frame	Parts
CD103	CDC180 x 2, CDC140 x 2, CDC182 x 1, MM635SCTLSS x 2
CD104	CDC180 x 2, CDC140 x 2, CDC181 x 1, MM635SCTLSS x 2

Assembly - Door Leaf

Concealed Midrailrail/Stile Joint (Optional)

Profile CD105, CD109

Before assembly, note parts list for frame being assembled.

It must be noted that door leaves are assembled around laybars if fitted. Follow laybar construction on pages (5-6 & 5-7), before door leaf construction.

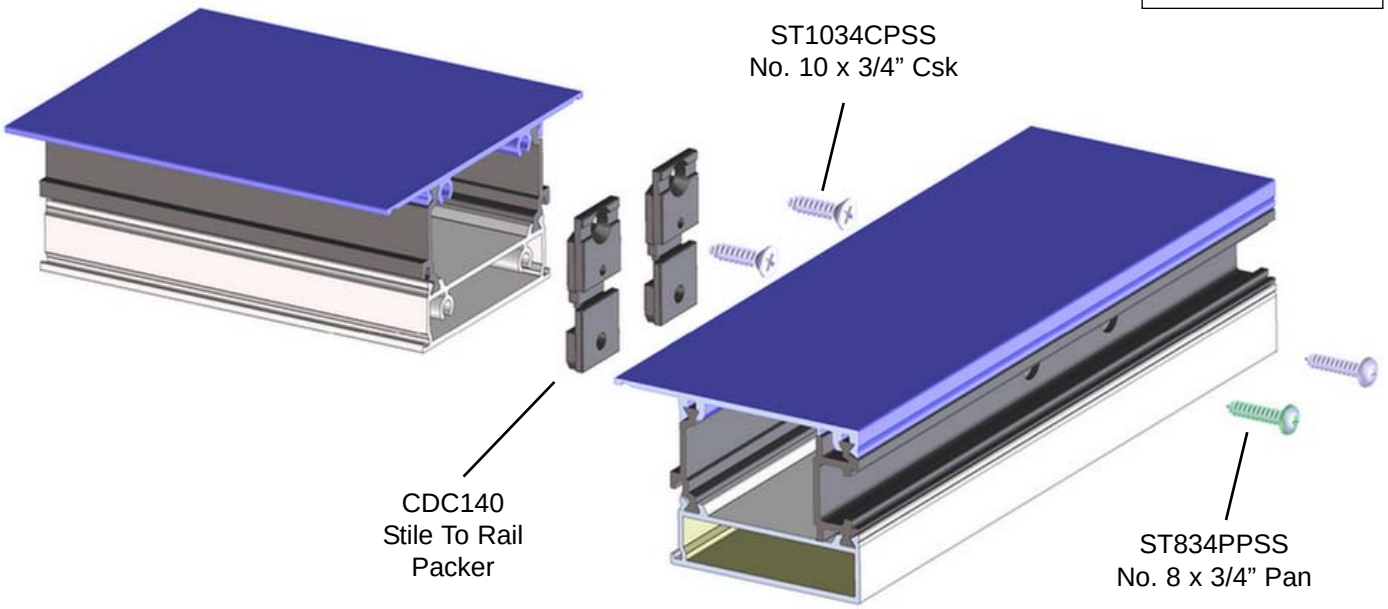
Coat all (major) mating faces that will come into contact with the door leaf using Henkel Terostat 934 or 939, taking care not to block any drainage paths.

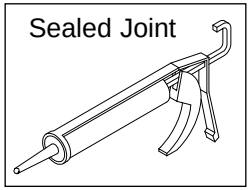
Screw fix the stile to rail packers to the ends of the midrail, using No. 10 Csk head self tap screws. Now attached the midrail to the stile with No. 8 Pan head self tap screws, taking care not to overtighten.

Clean off any excess sealant from the visible surfaces immediately using :-

Terosan FL Cleaner

Midrail
CD105 shown





Parts list per joint

Frame	Parts
CD105	CDC140 x 2, ST1034CPSS x 2, ST834PPSS x 2
CD109	CDC140 x 2, ST1034CPSS x 2, ST834PPSS x 2

Assembly - Door Leaf

Door Leaf Rail/Stile Joint (Std)

Profile CD103, CD104, CD105, CD109

Before assembly, note parts list for frame being assembled.

It must be noted that door leaves are assembled around laybars if fitted. Follow laybar construction on pages (5-6 & 5-7), before door leaf construction.

Coat all (major) mating faces that will come into contact with the door leaf using Henkel Terostat 934 or 939, taking care not to block any drainage paths.

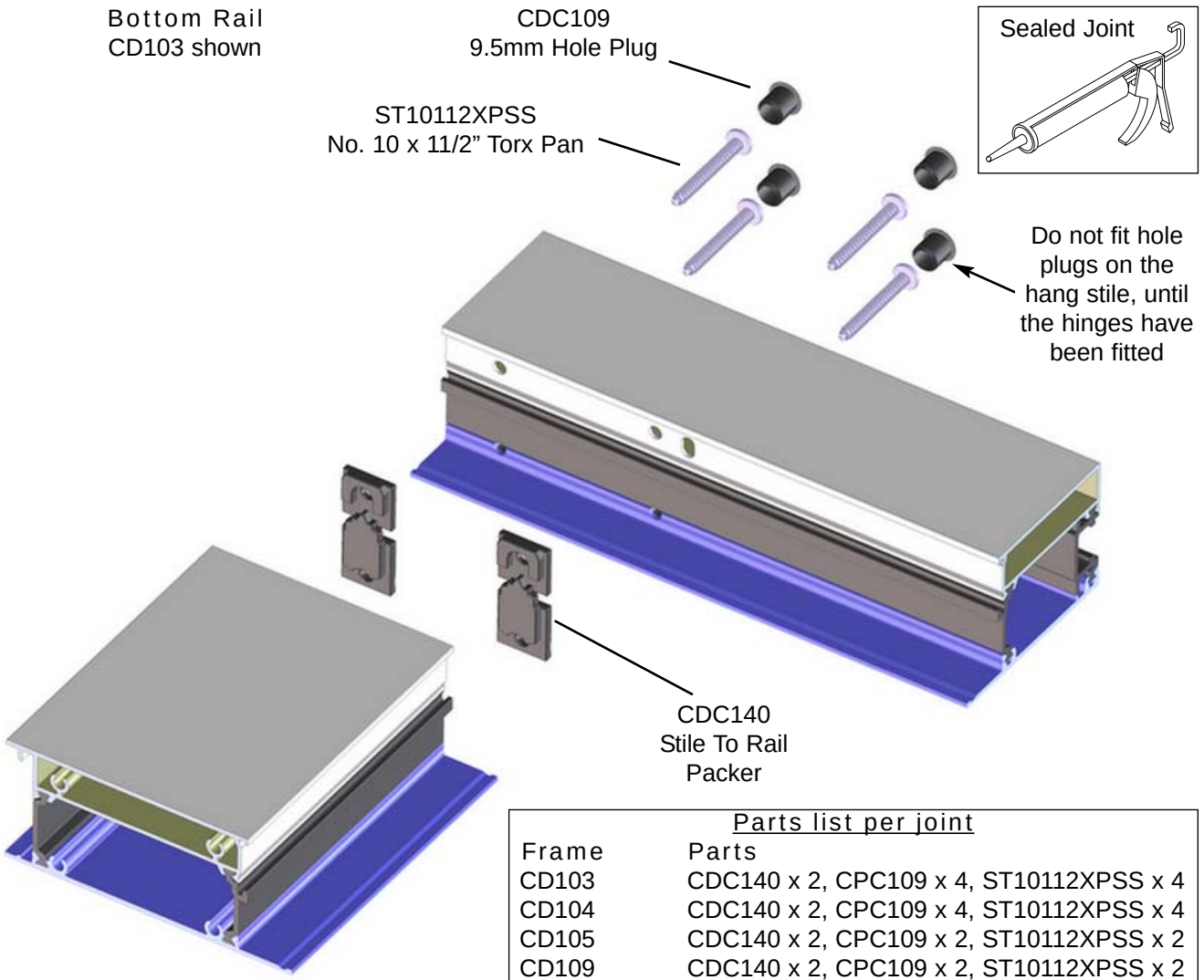
Assemble as shown, using rail to stile packers, and No. 10 Torx Pan self tap screws.

Clean off any excess sealant from the visible surfaces immediately using :-

Terosan FL Cleaner

Note:-
If fitting CD109 Midrail with a letter plate, check handing as the letter plate preparation is offset.

Bottom Rail
CD103 shown



Parts list per joint

Frame	Parts
CD103	CDC140 x 2, CPC109 x 4, ST10112XPSS x 4
CD104	CDC140 x 2, CPC109 x 4, ST10112XPSS x 4
CD105	CDC140 x 2, CPC109 x 2, ST10112XPSS x 2
CD109	CDC140 x 2, CPC109 x 2, ST10112XPSS x 2

Laybar Cruciform Joint

Profile CD108

Before assembly, note parts list for frame being assembled.

Any cruciform joints must be assembled before the laybars are fitted to the door leaf.

Secure both mouldings to the horizontal laybar, using a No.6 self tap screw. This screw will pass through the small moulding plus laybar, then screw into the larger moulding. Check that both mouldings are correctly aligned before final tightening.

Now coat all major mating faces that will come into contact with the laybar using Henkel Terostat 934 or 939.

Do not fully seal the voids between the laybars as this is to allow water to drain past the ends.

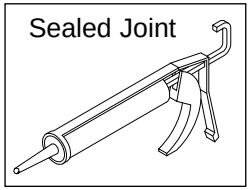
1. Slide the first laybar over the small moulding and secure in place, by positioning the cruciform bracket onto the horizontal laybar and then driving the No.6 self tap screw into the laybar screw spline.

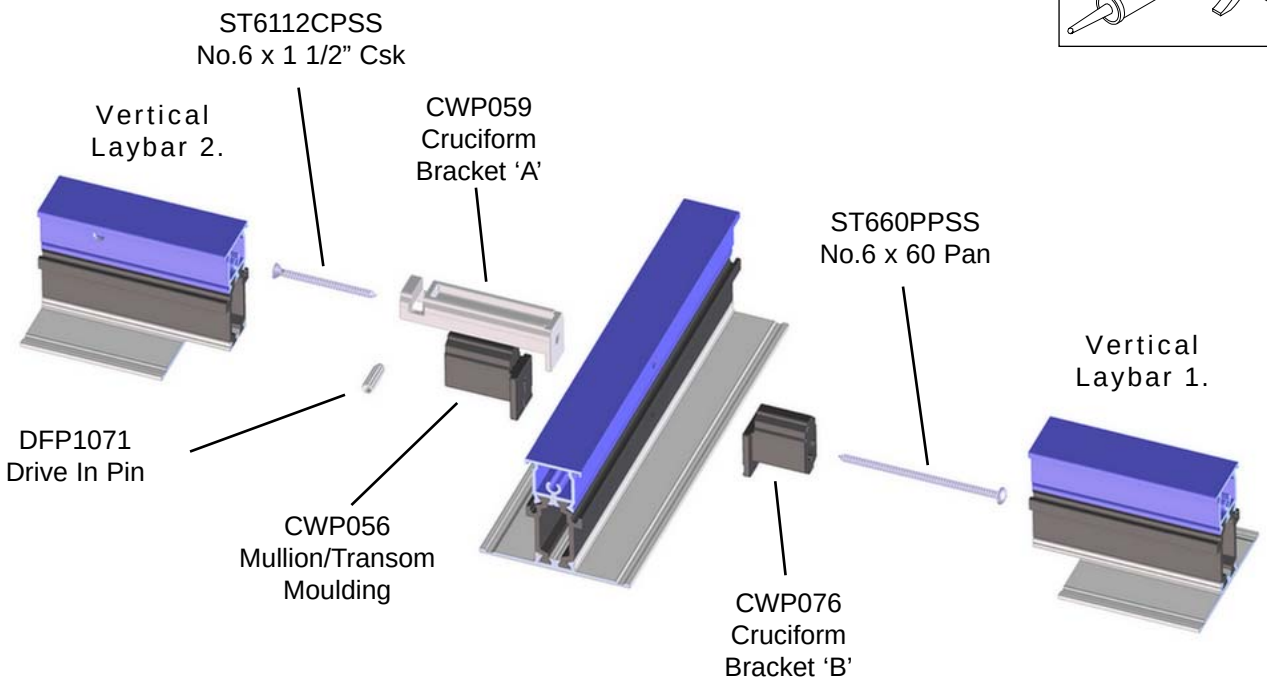
2. Slide the second laybar over the cruciform bracket and larger moulding, then attach to the horizontal laybar with the drive in pin, being driven into the cruciform bracket.

Clean off any excess sealant from the visible surfaces immediately using Terosan FL.

Horizontal Laybar
CD108 shown

Sealed Joint





Parts list per joint

Mullion	Parts
CD108	CWP056 x 1, CWP059 x 1, CWP076 x 1, ST660PPSS x 1, ST612CPSS x 1, DFC1071 x 1

Assembly - Door Leaf

Laybar Leaf Joint

Profile CD108

Before assembly, note parts list for frame being assembled.

It must be noted that laybars cannot be fitted after the door leaf has been assembled, therefore any laybars that are to be fitted, are first fitted to the stiles, with the rails being fitted after the laybars.

Any cruciform joints must be assembled before the laybars are fitted to the door leaf.

The illustration shown is for laybar to stile assembly, this assembly is also repeated for laybar to rails.

Secure both brackets to stile/rail, using No.6 self tap screws. Check that both brackets are correctly aligned before final tightening.

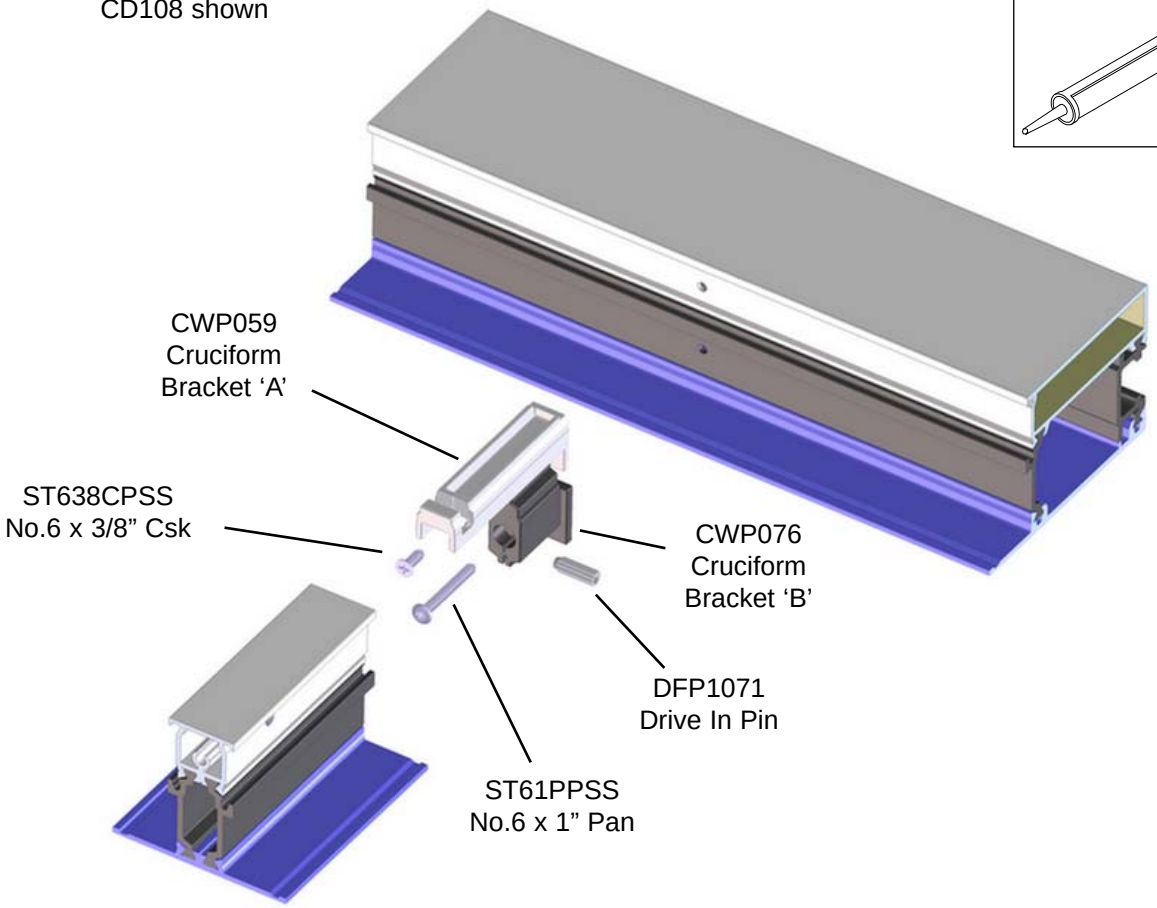
Now coat all major mating faces that will come into contact with the laybar using Henkel Terostat 934 or 939.

Do not fully seal the voids between the laybar and stile/rail as this is to allow water to drain past the ends.

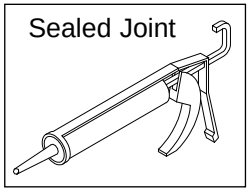
Slide the laybar over the brackets, then attach the laybar with the drive in pin, being driven into the cruciform bracket.

Clean off any excess sealant from the visible surfaces immediately using Terosan FL.

Horizontal Laybar
CD108 shown



Sealed Joint



Parts list per joint

Mullion	Parts
CD108	CWP059 x 1, CWP076 x 1, ST61PPSS x 1, ST638CPSS x 1, DFC1071 x 1

Assembly - Door Leaf

Lock Assembly

Profile CD102, CD106

If the auxiliary lock DFC1604 is required, assemble onto the main lock prior to fitting. Assembly details for the auxiliary lock can be found on the following page.

The lock can now be fitted along with the cylinder and handles.

Position the lock into the stile and offer the cylinder through the stile and the lock. Secure the cylinder in place with M5 machine screw supplied, this will align the lock correctly in height.

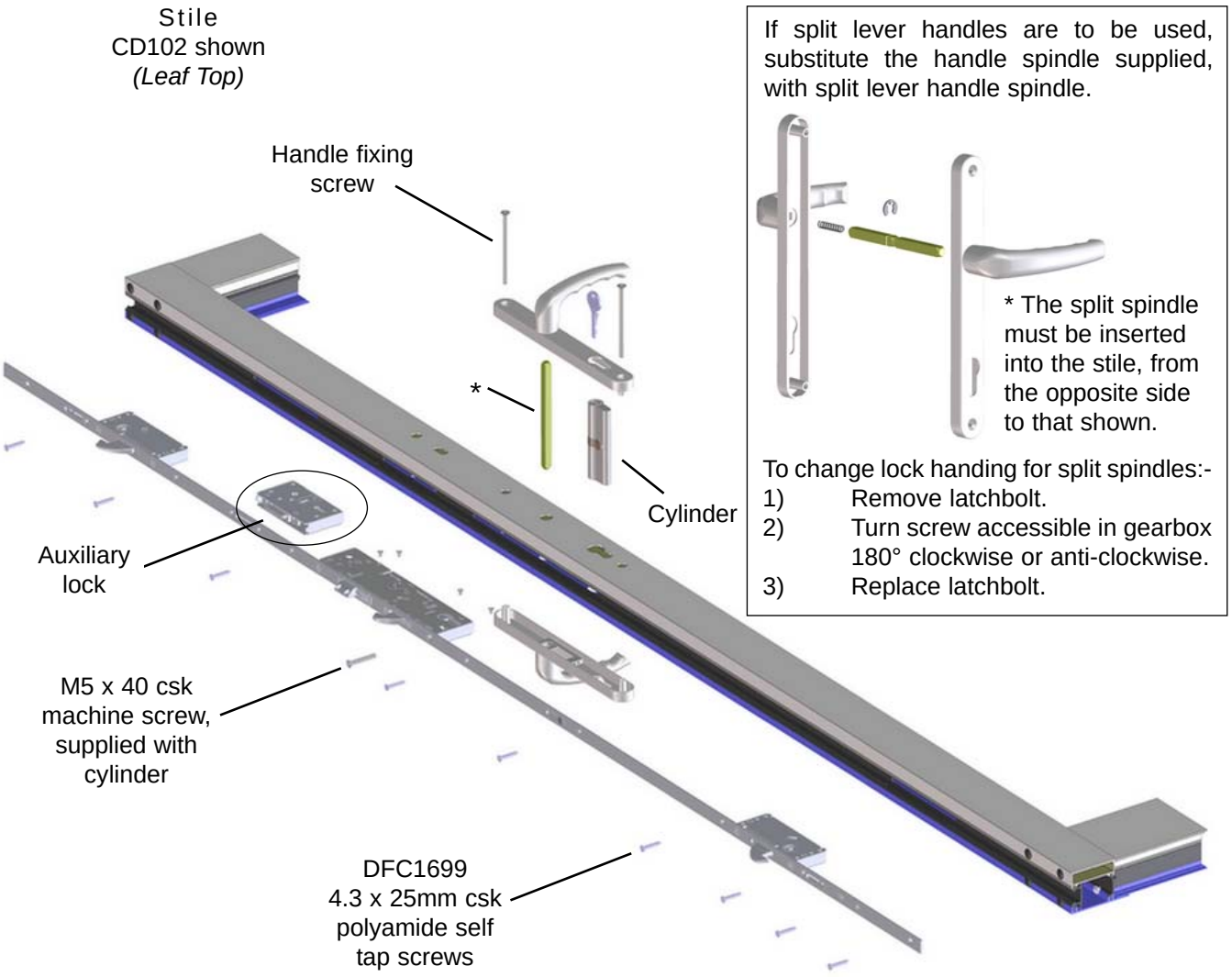
The lock should now be secured to the lock stile with DFP1699 polyamide self drill screws **(N.B. Do not drill pilot holes and take care not to strip the threads when tightening).**

After the lock has been fitted to the lock stile and secured, the handle is now fitted.

Handles are secured in place with the handle fixing screws supplied. Handle spring cassette's if supplied, must not be fitted.

To change lock handing:-

1) Lift handle to throw bolts
2) Remove two screws in latchbolt
3) Remove latchbolt, turn 180° and replace.



If split lever handles are to be used, substitute the handle spindle supplied, with split lever handle spindle.

* The split spindle must be inserted into the stile, from the opposite side to that shown.

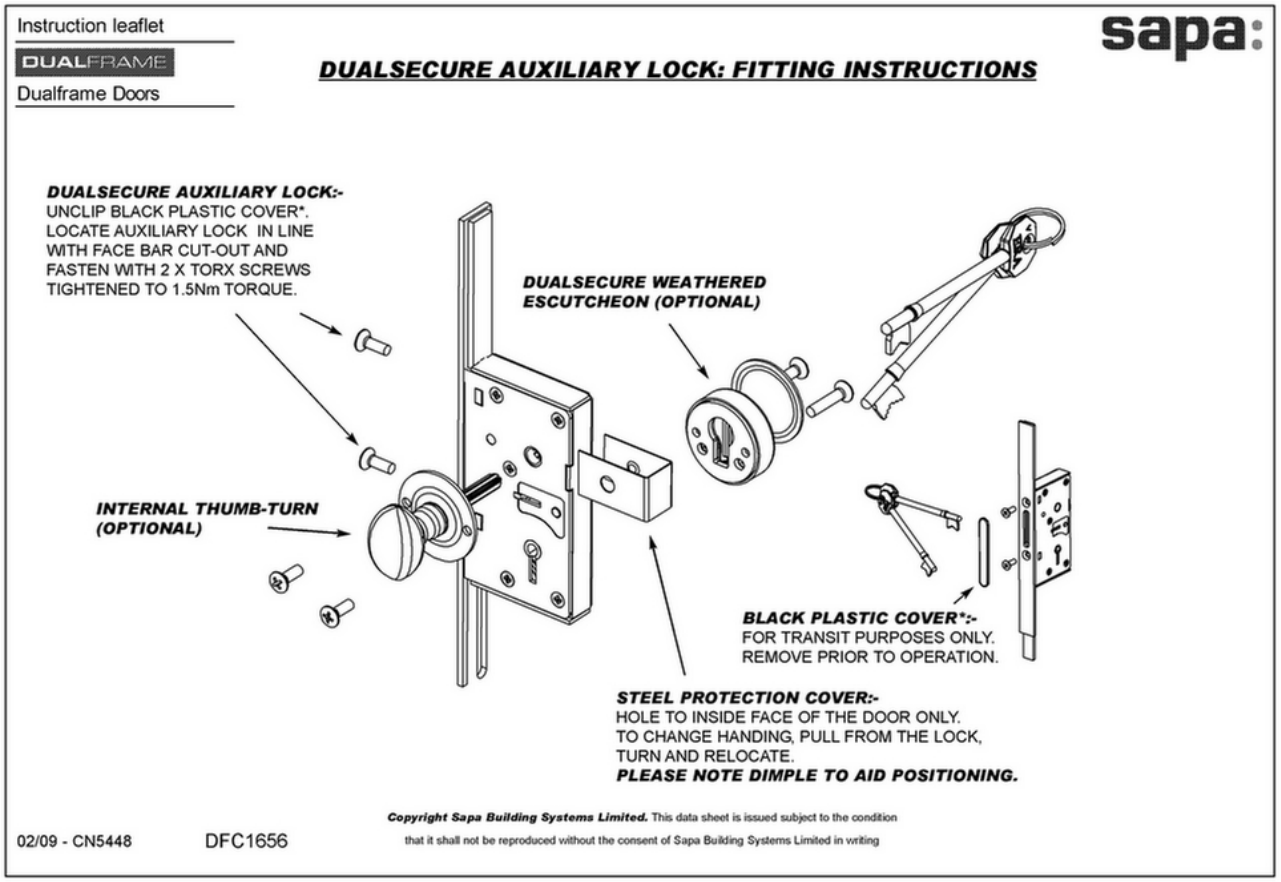
To change lock handing for split spindles:-

1) Remove latchbolt.
2) Turn screw accessible in gearbox 180° clockwise or anti-clockwise.
3) Replace latchbolt.

Auxiliary Lock Assembly

Profile CD102, CD106

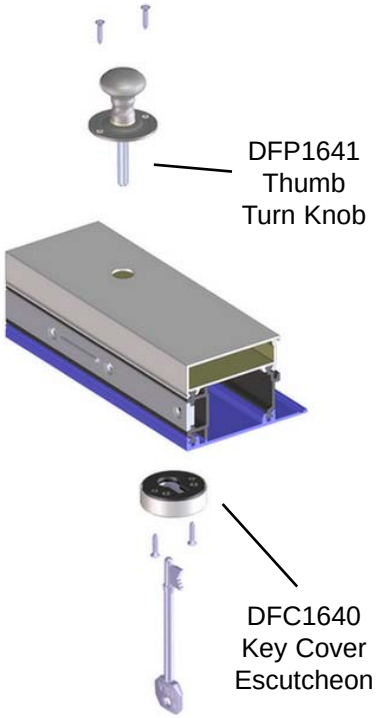
If the auxiliary lock is to be fitted, then follow the auxiliary lock fitting instructions, a copy of which is shown below.



After the lock has been fitted, check operation and operate a few times to free up the mechanism, then proceed with escutcheon and/or thumbturn assembly as shown below.

The fixing pilot holes for the escutcheon and/or thumbturn are drilled after the lock has been fully fitted, after checking door handing and ancillary requirements.

Position the thumb turn so that the knob is vertical when the door is locked. Correct location of the engagement splines is needed and if necessary, remove and refit to obtain correct positioning. Once satisfactory positioning is ascertained, rotate the mounting plate so that the mounting plate fixing holes are horizontal and drill 3.0 dia fixing holes.



Position the escutcheon so that the keyhole in the escutcheon aligns with the keyhole in the lock, then drill 3.0 dia fixing holes.

Fitting (Optional) Slave Stile Shootbolt

Before assembly can commence, the length of the shootbolt rods will have to be cut to size. Using the formula listed below, cut each rod to length and then smooth and shape the ends with a 2mm chamfer.

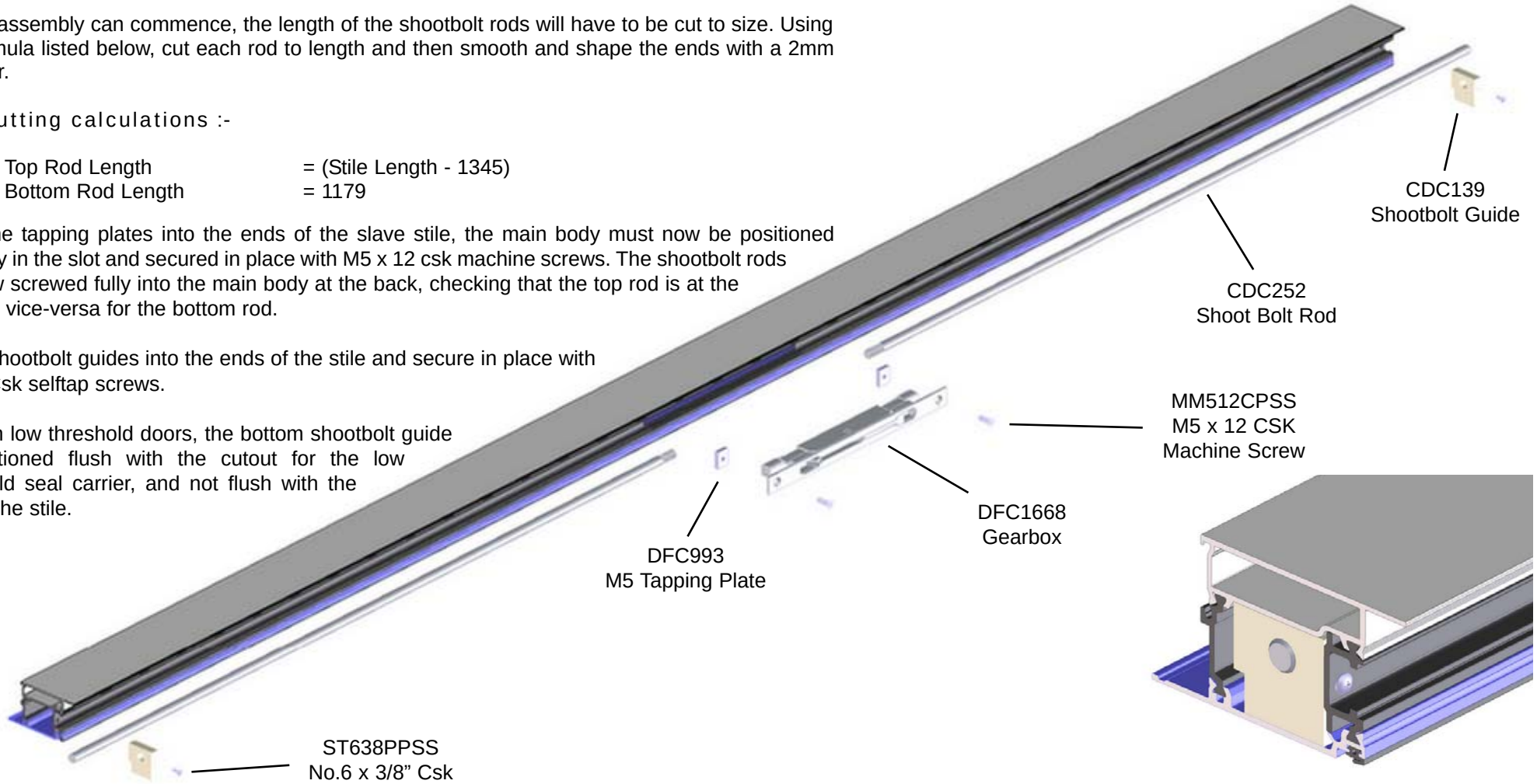
Rod cutting calculations :-

Top Rod Length	= (Stile Length - 1345)
Bottom Rod Length	= 1179

Slide the tapping plates into the ends of the slave stile, the main body must now be positioned centrally in the slot and secured in place with M5 x 12 csk machine screws. The shootbolt rods are now screwed fully into the main body at the back, checking that the top rod is at the top and vice-versa for the bottom rod.

Insert shootbolt guides into the ends of the stile and secure in place with No. 6 Csk selftap screws.

Note on low threshold doors, the bottom shootbolt guide is positioned flush with the cutout for the low threshold seal carrier, and not flush with the end of the stile.



Assembly - Door Leaf

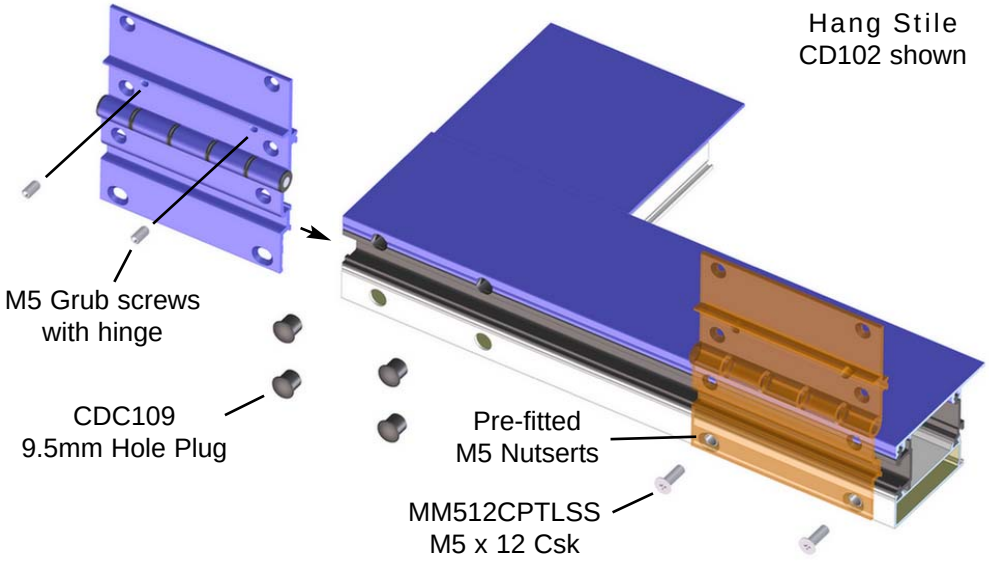
Door Leaf Hinge Assembly

Two hinges are fitted per door leaf.

Screw in the M5 grub screws supplied with the hinges, partly into each hinge. These are to be used for door leaf adjustment in the outerframe at a later stage. And if fitted, remove the 9.5mm hole plugs from the rail fixing holes to allow the hinge to be inserted into the hang stile.

Slide the hinge into the hang stile as shown, until the hinge fixing holes line up with the pre-fitted M5 nutserts. Only hand tighten M5 fixing screws and re-fit the 9.5mm hole plugs, repeat operation for the other hinge.

Note that the remaining two fixings holes are final fixing holes, and will be used at a later stage after satisfactory door alignment has been made.

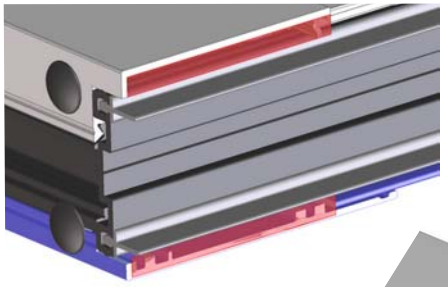


Low Threshold Seal Carrier

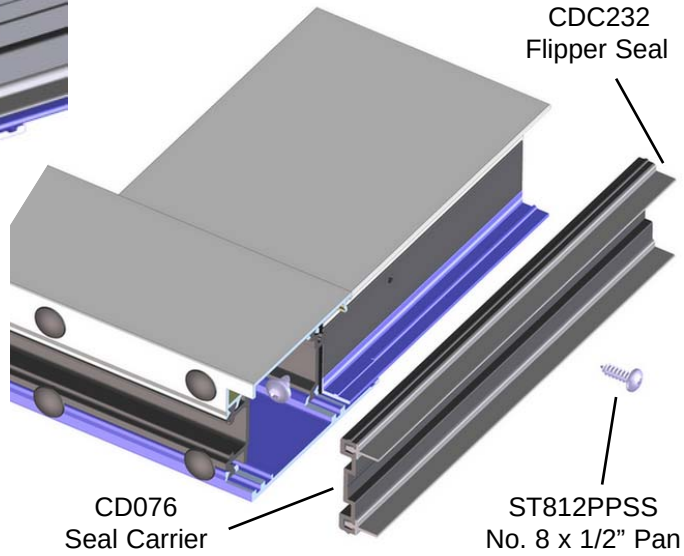
The seal carrier is fitted to the bottom of door leaves on low threshold doors.

Clip fit the seal carrier onto the bottom rail, making sure that the ends of the seal carrier is flush with the stile. Drill 3.0 dia fixing holes centrally in the seal carrier, approximately 100mm from each end and one equally located between the other two fixing holes. Secure in place with No.8 pan self tap screws, taking care not to over-tighten.

Slide in the flipper seal into both retaining grooves in the seal carrier, taking care not to stretch, and cut flush with the stile nose. Note that the slave leaf seal carrier will have a slot for the flush/shootbolt.



Fully seal all voids at the end of the seal carrier, then seal area highlighted nearest the inside of the door, the area highlighted towards the outside of the door is to be left unsealed so as to allow water to drain onto the cill. In addition, the contact faces nearest the inside of the door, between the seal carrier and the bottom rail are to be sealed.



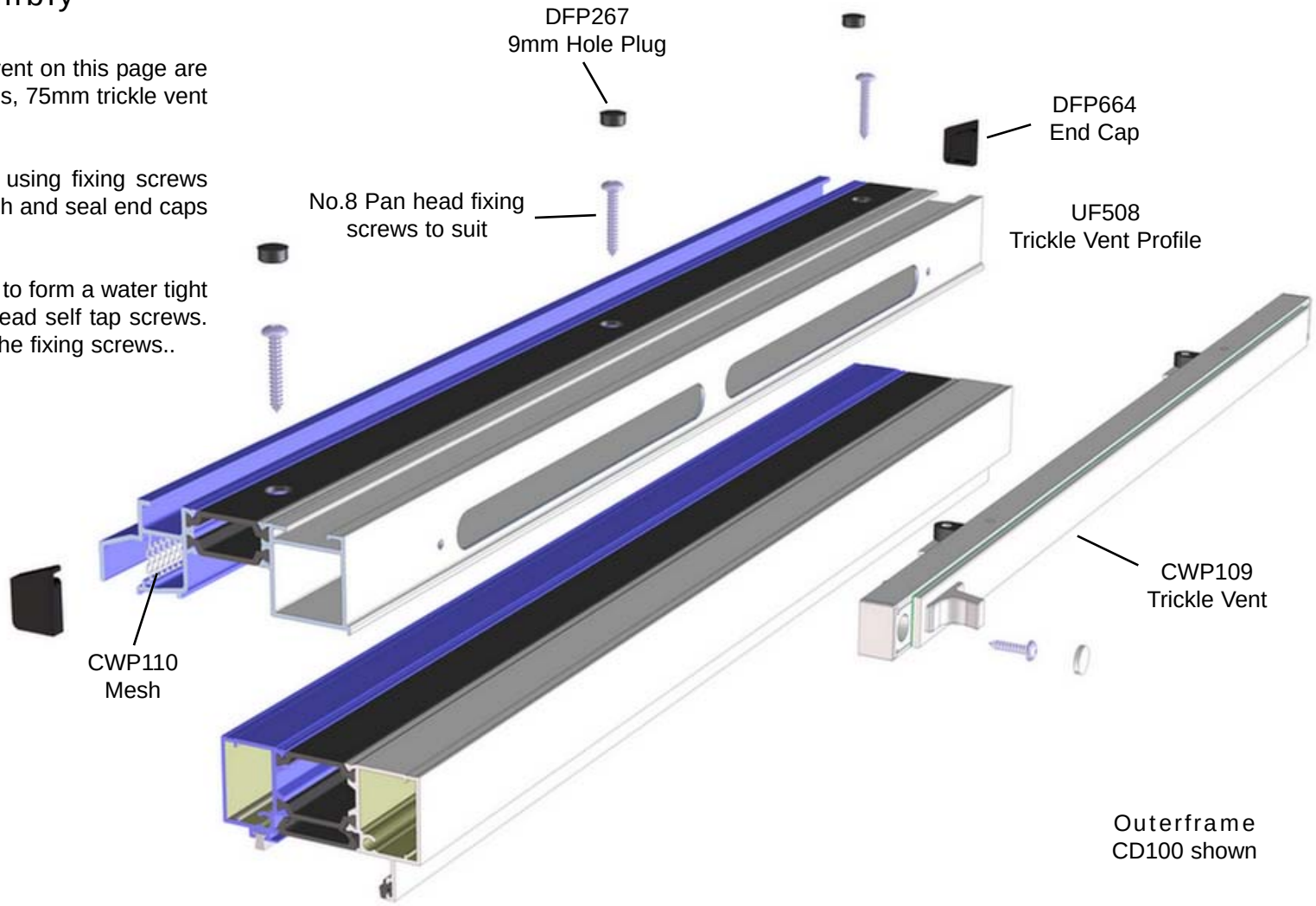
Assembly - Trickle Vent

Trickle Vent Profile Assembly

The assembly details shown for the trickle vent on this page are applicable to both 75mm and 52mm versions, 75mm trickle vent shown with an open out door.

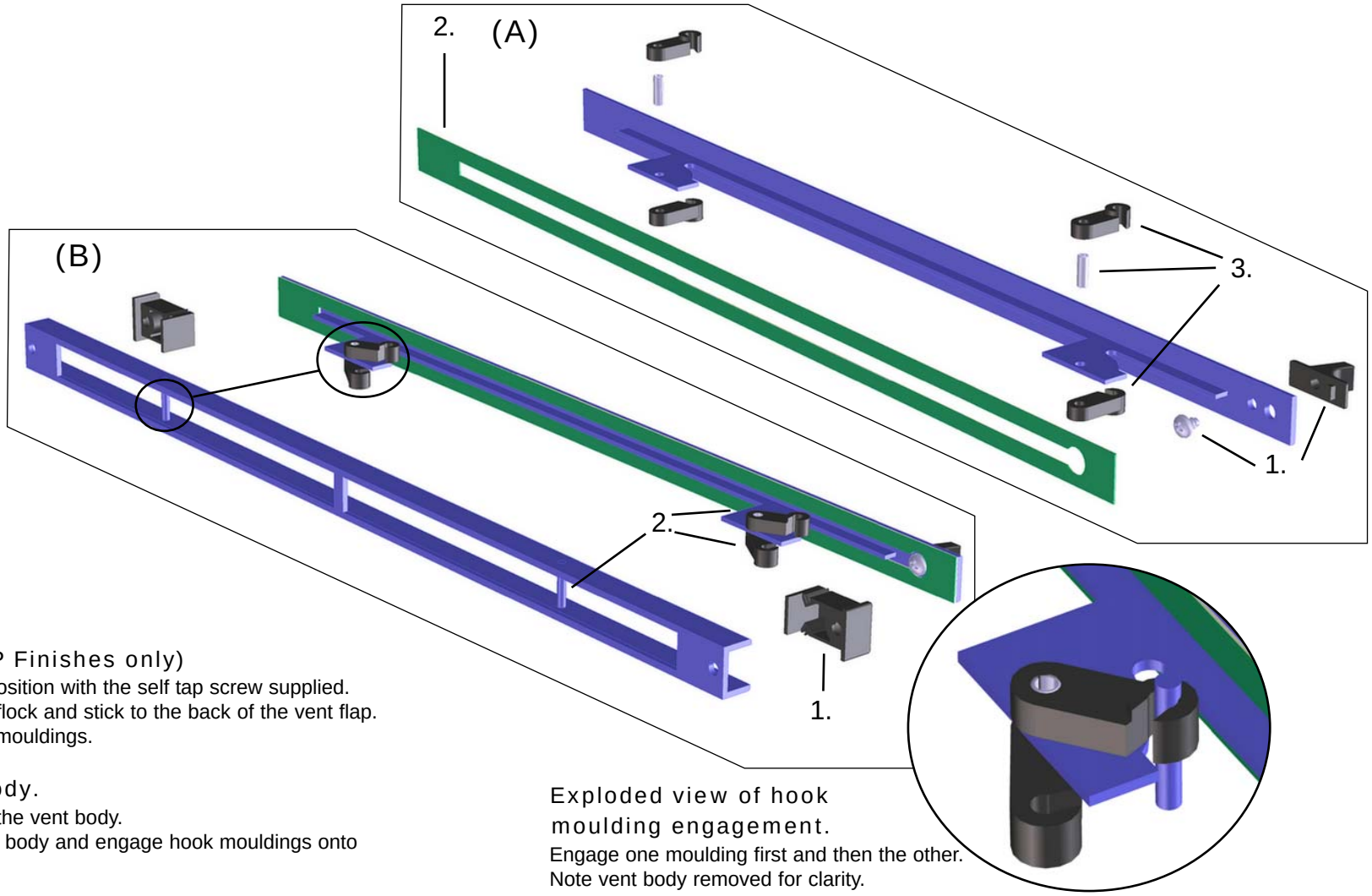
Assemble trickle vent CWP109 as shown, using fixing screws supplied and screw covers. Slide in the mesh and seal end caps into place.

The trickle vent profile is sealed to the head to form a water tight joint, and secured in place with No.8 pan head self tap screws. Finish off by inserting 9mm hole plugs into the fixing screws..



Outerframe
CD100 shown

Assembly - Trickle Vent Parts



(A) Assemble the vent flap (SP Finishes only)

1. Screw the operating knob into position with the self tap screw supplied.
2. Peal the backing strip off of the flock and stick to the back of the vent flap.
3. Push the roll pins into the hook mouldings.

(B) Attach vent flap to vent body.

1. Push end caps into the ends of the vent body.
2. Lower the vent flap into the vent body and engage hook mouldings onto the body pins.

Exploded view of hook moulding engagement.
Engage one moulding first and then the other.
Note vent body removed for clarity.

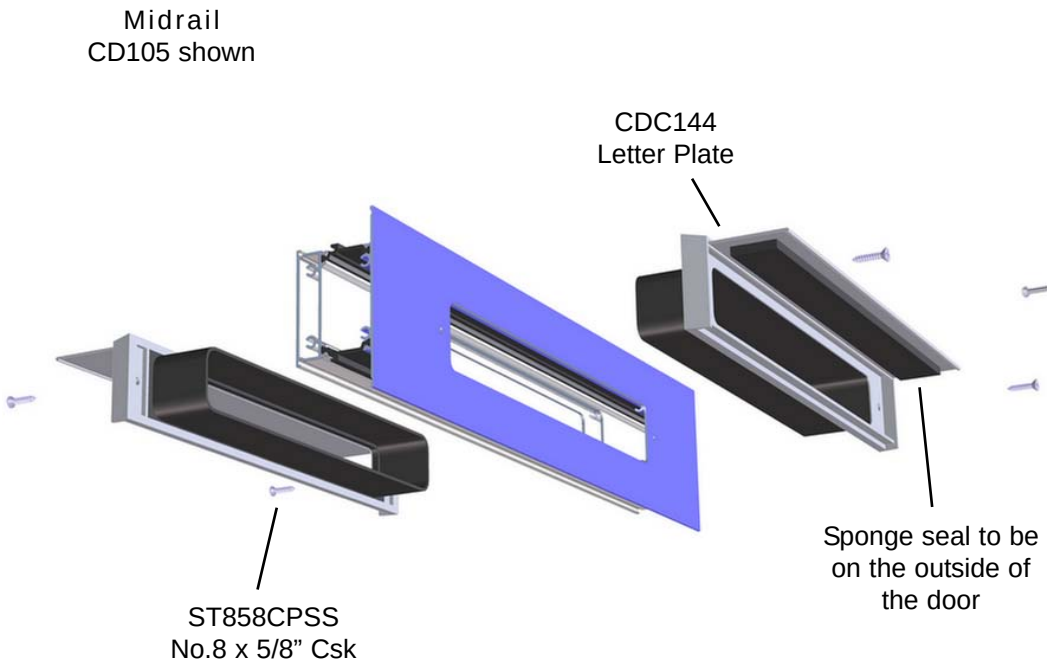
Assembly - Letterplate

Midrail Letterplate CDC144 Assembly

This detail is only applicable to doors that is fitted with a letterplate.

Assemble both halves of the letterplate by inserting into both sides of the midrail, taking note that the letter plate with the sponge seal is to be on the outside of the door (open out door shown).

Once positioned, secure letterplate in place with No.8 csk self tap screws.

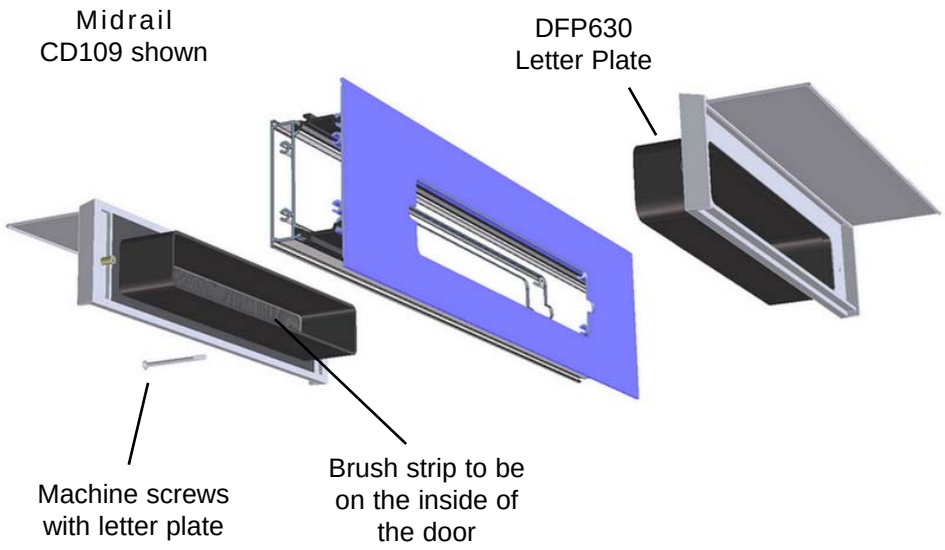


Midrail Letterplate DFP630 Assembly

This detail is only applicable to doors that is fitted with a letterplate.

Assemble both halves of the letterplate by inserting into both sides of the midrail, taking note that the letter plate with the brush strip in is to be on the inside of the door (open out door shown).

Once positioned, secure letterplate in place with machine screws provided.



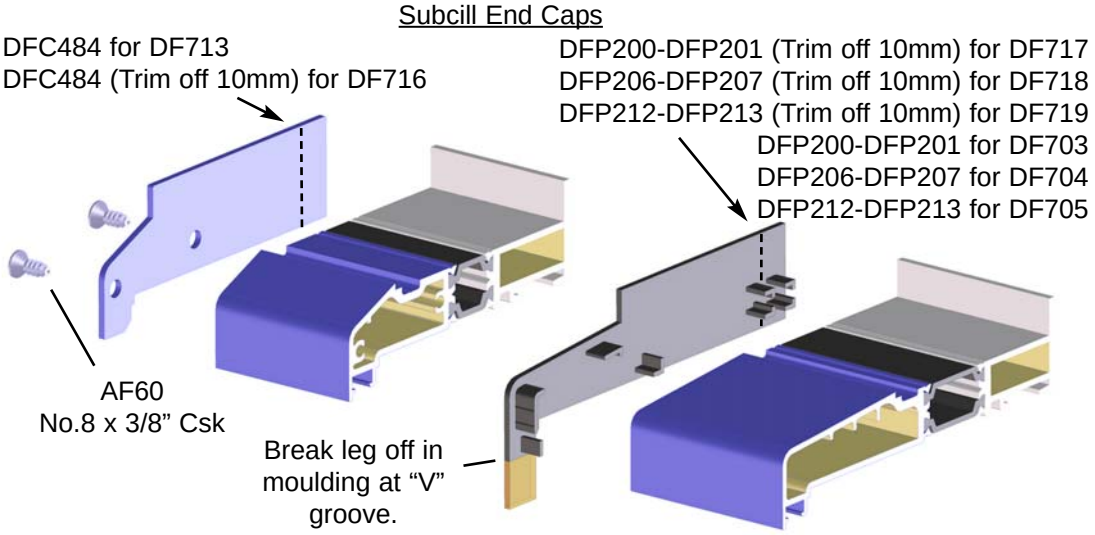
Fitting Of Subcill

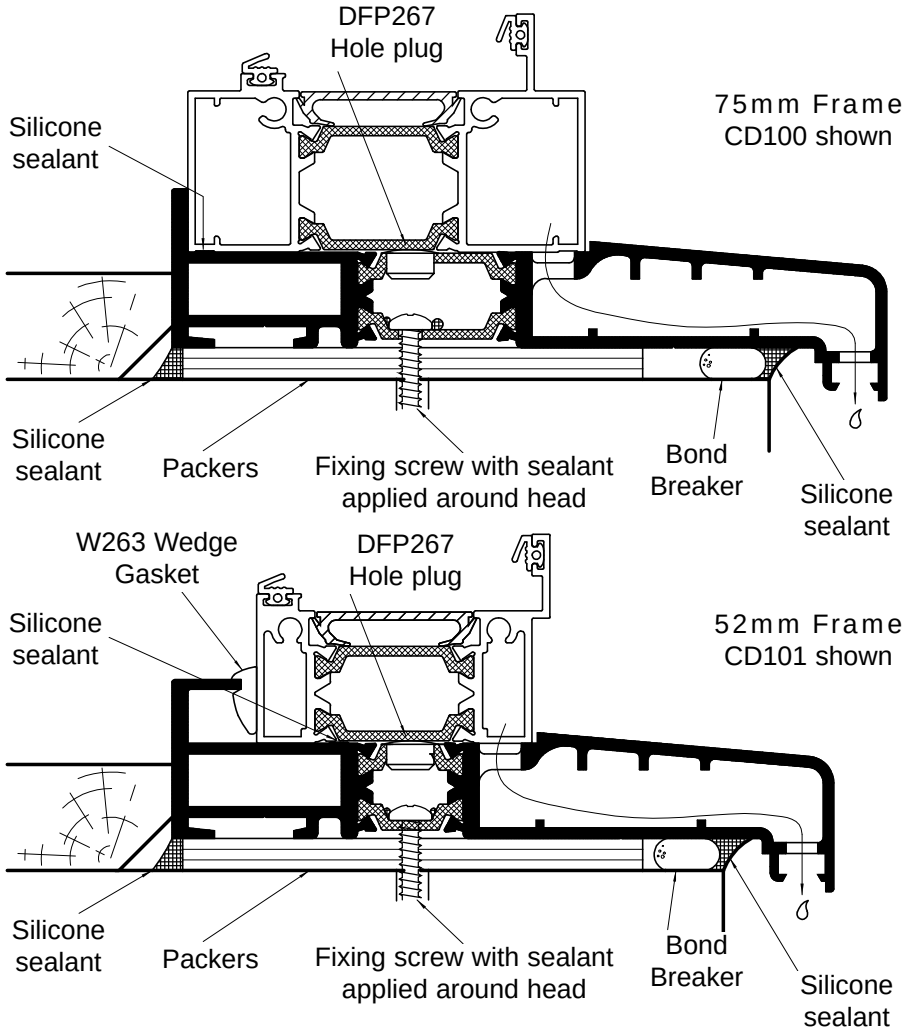
Profile DF703, DF704, DF705, DF713, DF716, DF717, DF718, DF719

Drainage paths through the sub-cill can be seen on the illustration alongside, so care must be taken to ensure they are not obstructed and that screw fixings do not penetrate these areas.

When positioning the frame to the subcill, silicone sealant must be gunned as shown to ensure that a watertight joint is created on the inside of the frame. Seal under the head of any fixing screws to prevent water ingress and seal DFP267 hole plugs into position.

Subcill end caps must be fully sealed then pushed into position, or as for DF713 or DF716, fully sealed and secured into position using No.8 x 3/8" csk screws.





Fitting Frame Into Aperture

It is vitally important that the cill is laid flat and level to achieve good performance. Jambs must be vertical in both planes, and no twist or other distortion allowed in the frame.

Prior to installing the frame, the opening should be checked to ensure that it is free of debris, and that any projecting brickwork has been trimmed back.

Any damaged damp proof membranes should be replaced or additional membranes incorporated.

When the opening was originally measured a suitable gap should have been allowed around the door, this will allow the door to be packed to ensure that it is plumb and square within the opening.

Ideally the frame should be bedded on mortar.

The frame can then be positioned in the opening and held square by packing at the very corners of the frame, taking care not to damage or deform the frame profiles.

To check for squareness, measure the diagonals from corner to corner, these diagonal dimensions should not differ by more than 1 or 2mm, if they do then adjust the packing until the frame is square within the opening.

The lay of the frame in to out can be checked by using a spirit level on the jambs. On replacement applications, the correct position of the frame might not align with the original. This will require some remedial work to make good the plaster reveal around the frame on the inside as well as any render that is present on the outside.

Fixing of Frame

The first fixing must always occur within 150mm of the corner of the unit and then at no more than 600mm centres (do not over-tighten fixings), the type and frequency depends on the expected applied loadings.

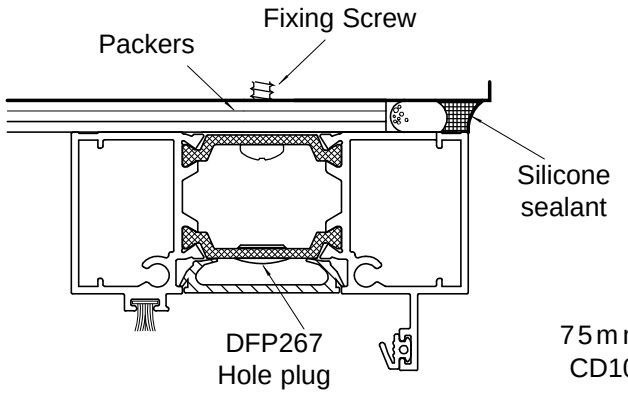
Packing will be required at the fixing points to prevent distortion of the frame. Drilled holes in the frame should be sealed and DFP267 hole plugs fitted.

Note fixings and hole plugs are not supplied with door kits.

Foam Fixing

Fixing foam can be used in conjunction with screw and lug fixing, but must not be used as an alternative to mechanical fixing.

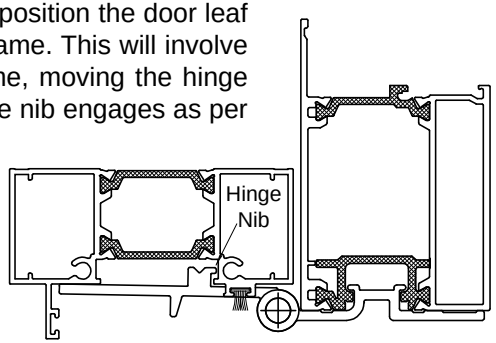
Care must be taken not to allow the foam to come into contact with the painted finish, and as such the use of some form of masking tape would be advisable. Permanent staining will be caused if the foam contacts the frame.



75mm Frame
CD100 shown

Hanging Of Door Leaf

With the hinges attached to the door leaf, position the door leaf so that the hinges engage into the outerframe. This will involve inserting the hinge fully into the outerframe, moving the hinge back then pulling forward, so that the hinge nib engages as per detail shown.



Note that the door leaf hinge fixing holes are slotted, and by loosening the leaf to hinge fixings. The hinges can be adjusted up or down so that the hinges align up with the outerframe preparations.

Once in position, secure the hinge to the outerframe with No.8 csk self tap screws. Then screw in the hinge adjustment grubscrews, hand tight only.

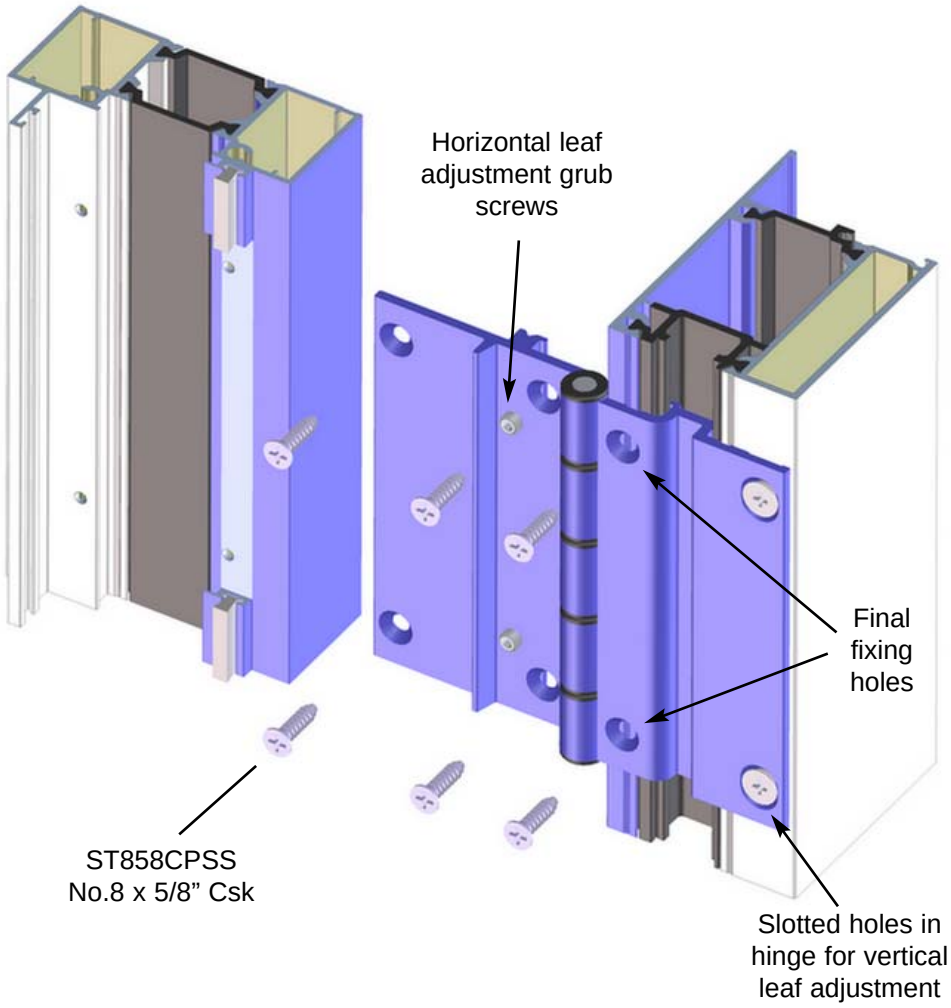
DO NOT SCREW REMAINING HINGE/ LEAF FIXING SCREWS AT THIS STAGE!

Close the door and check the leaf to frame gap on all four sides, making hinge adjustments if necessary.

Horizontal adjustment can be performed by loosening the frame fixing screws and making adjustments by screwing in or out the grub screws located in the hinge. Re-tighten the frame fixing screws after adjustment has been made

Vertical adjustment can be performed by loosening the leaf fixing screws and raising or lowering the door leaf. Re-tighten the leaf fixing screws after adjustment has been made.

Once satisfactory leaf adjustment has been made, drill 3.2 dia holes in the final fixing holes in the door leaf and secure with the remaining two No.8 csk self tap screws.



Door Leaf Glazing

Open in doors.

CWC055 or CWC070 retained gasket is inserted into the glazing bead, and is cut square with the horizontal beads, and mitred with the vertical beads. Care should be taken to ensure the seal is not stretched during fitting.

Open out doors.

Self adhesive retained gasket CDC145 is applied to the rails and is square cut. CDC146 self adhesive retained gasket is applied to the stiles and mitered/joined with CDC145. Care should be taken to ensure the seal is not stretched during fitting, and aluminium surfaces must be clean prior to the gasket being applied.

Glazing

Position the adjustable glazing packers into the door leaf using packer positions shown. A small amount of silicone sealant may be used to retain there position, however care must be taken to ensure that the sealant does not obstruct any of the drainage paths.

After the glazing packers have been positioned, the glass is now carefully offered in and the adjustable glazing packers tightened to retain the glass centrally within the opening. Care should be exercised so that the packers are not over tightened.

Once the glass is positioned correctly within the opening and the door leaf checked to ensure that it is square, the beads can be fitted. Begin by inserting the top and bottom glazing beads, and then the sides. It is very important that the joints between beads are carefully sealed with Henkel Terostat sealant to form an airtight junction.

A plastic wedge should be pressed between the glass and the frame, forcing the glass towards the retained gasket. This will ease the glazing process for the wedge gasket.

Glaze out doors.

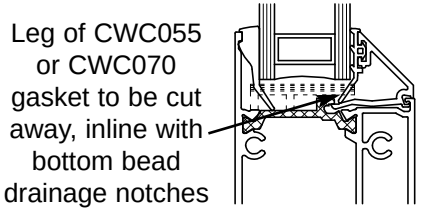
CDC142 vertical wedge gasket is wedged between the stiles/glass and is square cut. For the horizontal wedge gasket, Remove the 2mm tear off strip from CDC142 and wedge between the rails/glass and mitere/join with the vertical wedge gasket located in the stiles.

Glaze in doors.

Remove the 2mm tear off strip from CDC142 vertical wedge gasket and wedge between the vertical bead/glass with the ends square cut. For the horizontal wedge gasket, Remove the 2mm tear off strip from CDC142 and wedge between the horizontal beads/glass and mitere/join with the vertical wedge gasket.

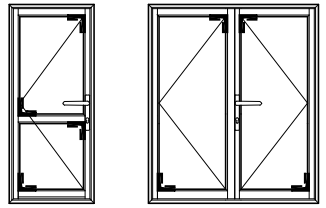
Care should be taken to ensure the seal is not stretched during fitting and Henkel Terostat sealant must be applied to the gasket corners to ensure a good airtight joint is achieved. Note that if the wedge gasket compression is too great, the 1mm tear off strip can be removed.

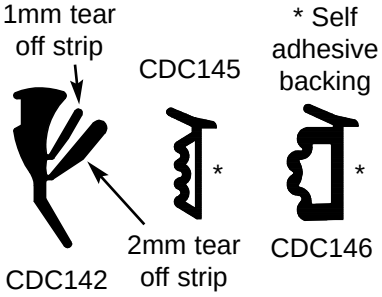
Typical Glaze In Detail



Typical Glaze Out Detail

Typical Packer Positions

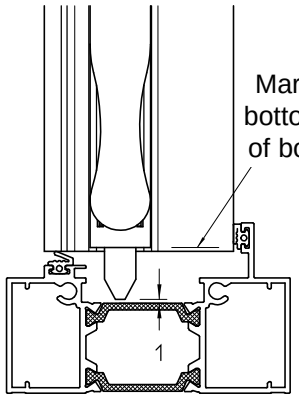




Double Door (Std) Flushbolt Assembly

The flushbolt is fitted at the top and bottom of the slave leaf.

Position the flushbolt onto the slave leaf, and with the flushbolt in the locked position. Mark the bottom of the flushbolt whilst maintaining a 1mm gap between the locking pin and the outerframe, see detail (DO NOT drill a clearance hole in the polyamide for the flushbolt).



Note that for low threshold doors, the flushbolt bottom is positioned flush with the bottom of the stile.

With the flushbolt in the unlocked position, secure the flushbolt to the stile with DFP1699 polyamide self drill screws (DO NOT drill pilot holes and take care not to strip the threads when tightening).

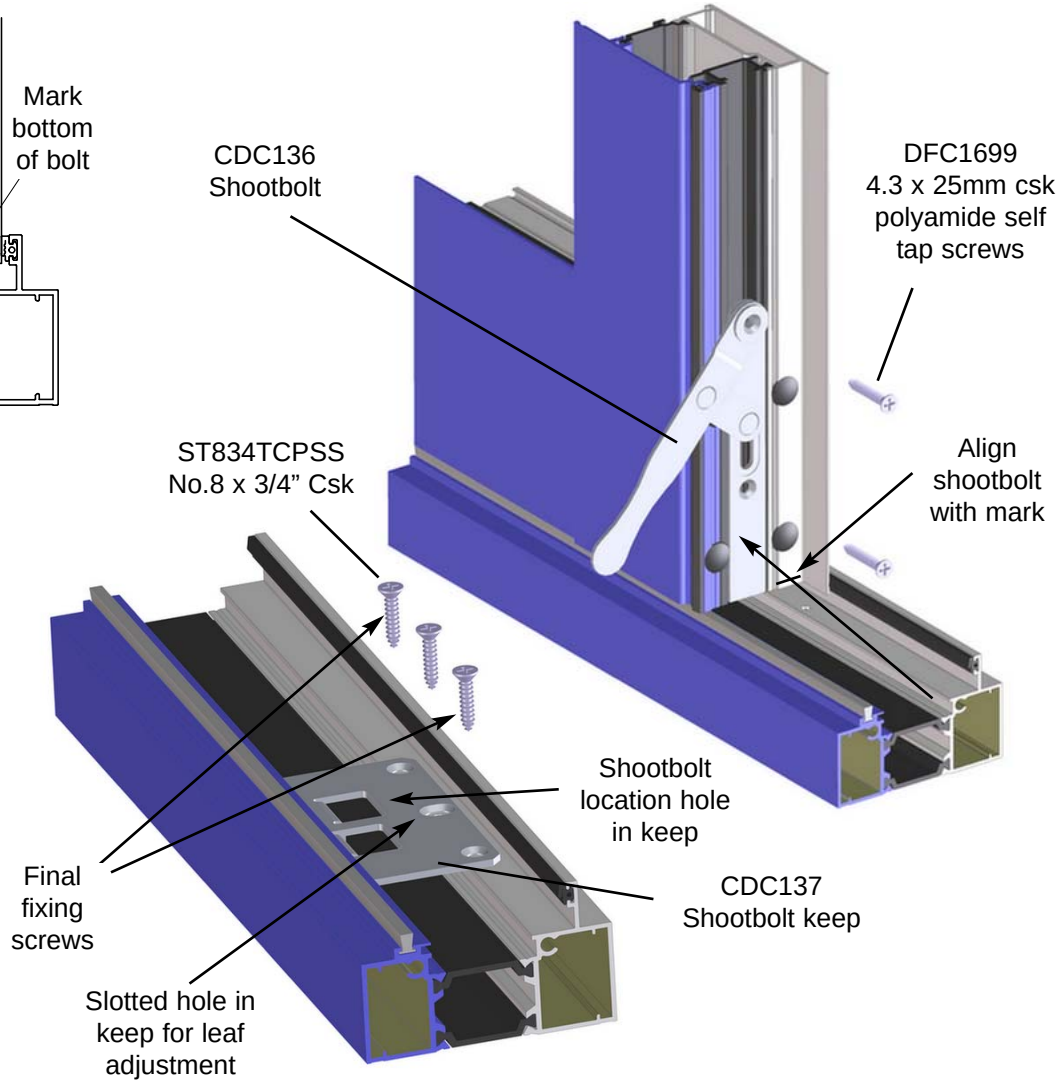
Flushbolt/Shootbolt Keeps

Flushbolt/Shootbolt keeps are fitted in the head and cill of double doors, but only at the head of low threshold doors.

Check handing, and then position the keep so that the centre slotted hole aligns up with the pre-drilled fixing hole in the head/cill.

Secure keep with No.8 csk self tap screw in the centre hole only, and then check slave leaf flushbolt/shootbolt operation. The keep position can be adjusted by loosening the centre fixing screw, sliding forwards or backwards and then re-tightening.

When satisfactory flushbolt operation has been obtained, drill 3.2 dia fixing holes through the remaining two fixing holes in the keep. And secure with No.8 csk self tap screws.



Hook And Latch Keep Assembly

Hook and latch keeps are fitted to the locking jamb on single doors and on the slave stile on double doors.

Check handing, and then position keeps so that the slotted adjustment holes align with the pre-drilled fixing holes. Secure keeps with No.8 csk self tap screws in the pre-drilled holes only, and then check door leaf locking operation. The keep positions can be adjusted by loosening the adjustment screws, sliding forwards or backwards and then re-tightening.

When satisfactory door leaf locking operation has been obtained, drill 3.2 dia fixing holes through the remaining fixing holes in the keeps. And secure with No.8 csk self tap screws.

Keep Pack Usage...	CDP122	52mm Outerframe LH OO / RH OI
	CDP222	52mm Outerframe LH OI / RH OO
	CDP124	75mm Outerframe LH OO / RH OI
	CDP224	75mm Outerframe LH OI / RH OO
	CDP127	Double doors

Seals And Trims

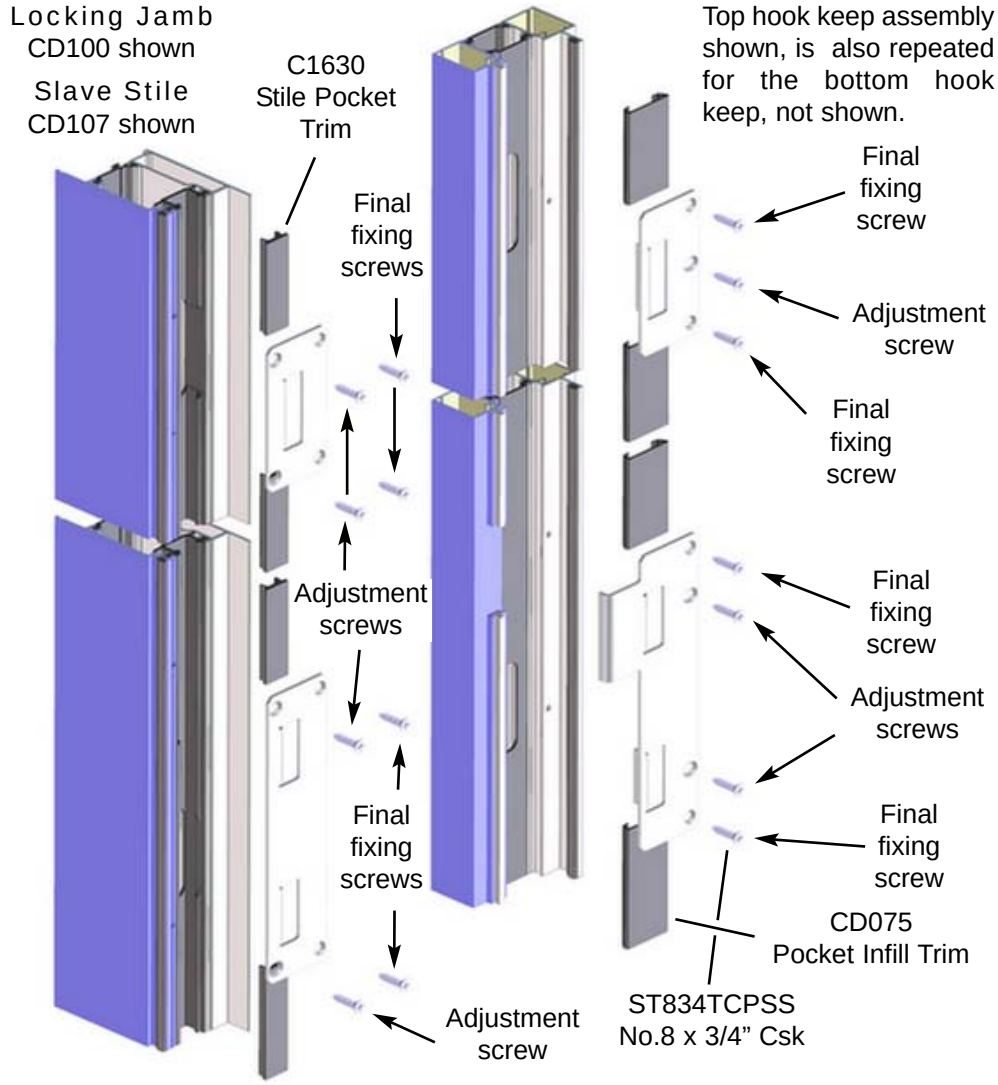
When satisfactory door assembly/operation has been finalised, the remaining seals and trims can be fitted.

Using general arrangements as a guide...

C1630 Trim is fitted to all stiles, flush with the ends and cut around the lock and keeps.

Woolpile DFC1450 is fitted at the head, CDC147 is fitted in the jambs and is cut around keeps and hinges.

DFC1103 or DFC1208 frame/vent seal is fitted in the outerframe and meeting stiles, taking care not to stretch during fitting.



Security Blocks

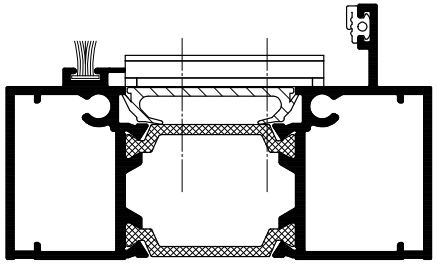
For enhanced security, security blocks are to be fitted opposite both hinges, or as near as possible if there is an obstruction.

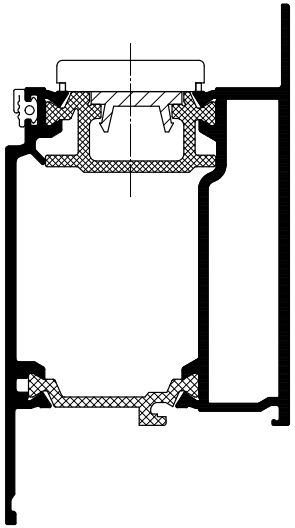
Position the blocks onto the profile, then secure in place with the self drill, self tap screws. Do not drill a pilot hole or overtighten, these screws.

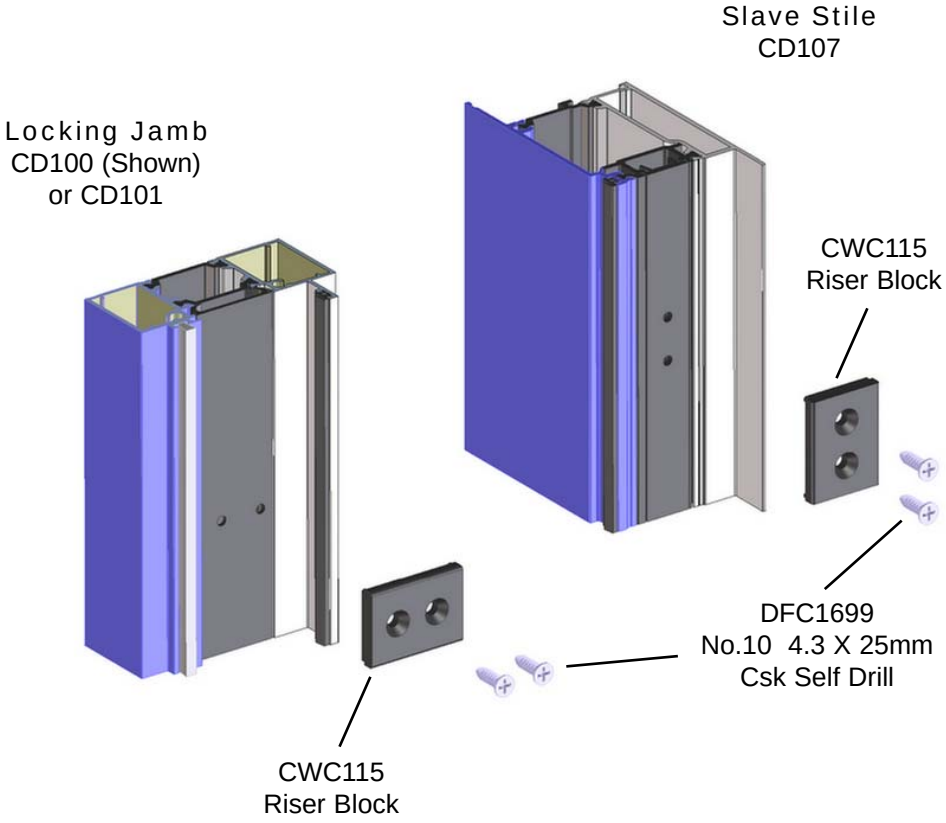
Two blocks are fitted to the locking jamb on single doors, with the security block being located horizontally.

Two blocks are fitted to the slave stile on double doors, with the security block being located vertically.

See positional detail below.







Sealing

The recommended sealant for the exterior is Low Modulous Neutral Cure Silicone Sealant. Backing foam should be used where the perimeter gap is over 5mm. Where the gap is within the 5mm range, a neat application of silicone is all that is required on the outside.

A final check of the internal and external perimeter seals should be undertaken. Any weak spots that are identified should be rectified and tooled to a high visual finish. Any excess sealant must be cleaned off of the finished surfaces using appropriate cleaner.

Cleaning After Installation

If excess sealant is to be cleaned off. Ensure that any solvent used will not damage any of the metal finishes, synthetic rubbers or plastics which may be present.

Warning

Take particular care if there is any cement or plaster on the aluminium. It is harmful to the metal finish and should be washed off while still wet. DO NOT RUB or particles of grit will permanently damage the metal or paint finish.

Routine Cleaning

No aluminium finish is “Maintenance Free” and hence should be cleaned at regular intervals.

Product should be washed down with warm water containing a mild detergent at least once a year. In areas where airborne contaminants are more concentrated than usual - near the sea, around swimming pools, or in place where in industrial air pollution is a known hazard - the products should be cleaned every three months or more frequently if requested by the powder coat manufacturer for that specific location.

When cleaning the products, it is a wise precaution to check that all hardware fixing screws are tight, and that all parts are free from damage. At the same time, and at least annually, make sure that drainage paths are not blocked by airborne debris, or other ‘foreign’ bodies.

Maintenance

The hardware fitted to Sapa products does not need ‘calendar’ servicing but should be maintained on ‘as necessary’ basis. Thus items such as door locks and hinges, which have been lubricated in manufacture and/or installation should be treated with the appropriate lubricant when they show signs of stiffening up in use, or if they have been left unused for a considerable time.

Regular checks to be carried out on the locking gear and hinges, at least once a year or more frequently depending upon the hostility of the environment, i.e. coastal regions or dusty environments.

Operation

In order to preserve functionality of the door, and to guarantee security, it is imperative the directives listed below are observed.

- *Intermittent operation or sudden unexplained impairment of the functioning of any item of hardware should be investigated immediately by a person familiar with the product and repairs/adjustments be effected before user safety or product function is jeopardised.*

- *Replacement of faulty or damaged parts should be carried out by an experienced person using the correct parts.*

- *Where an item is still covered by the warranty given by the fabricator or installer of the product, requests for remedial work under such guarantees must, in the first instance, be referred to that person or company.*